UNITED THEOLOGICAL SEMINARY
DAYTON, OHIO, USA

THE DEVELOPMENT OF NWNET: AN E-MAIL COMMUNICATION SYSTEM FOR THE DIOCESE OF NEW WESTMINSTER

with a Manual, a Training Model and a Survey of Communication Systems of Anglican/Episcopal Dioceses

A FINAL DOCUMENT SUBMITTED TO
THE DOCTORAL STUDIES COMMITTEE
IN PARTIAL FULFILLMENT OF THE REQUIREMENTS
FOR THE DEGREE OF DOCTOR OF MINISTRY

BY

THE REVEREND RON BARNES, B.A., S.T.B

VANCOUVER, BRITISH COLUMBIA, CANADA
JULY, 1997

United Theological Seminary
Dayton, Ohio, USA

Faculty Approval Page
Doctor of Ministry Final Document

THE DEVELOPMENT OF NWnet AN E-MAIL COMMUNICATION SYSTEM FOR THE DIOCESE OF NEW WESTMINSTER

by

The Rev'd Ron Barnes
United Theological Seminary, 1997

Mentors:
The Rev'd Dr. David Lochhead
The Rev'd Dr. J.T. Roberson

Date: .....

Approved:.....

.....

.....
Mentors

.....
Dean, Doctoral Studies

ACKNOWLEDGEMENTS

I wish to acknowledge the generous assistance of SoftArc, Inc. for their grant of the First Class Client/Server Software, and the thoughtfulness of Ms. Beverley D'Alessandro, late of SoftArc, Inc.

I wish to acknowledge the counsel and advice of the Rev'd Dr. David Lochhead, of Vancouver School of Theology, my mentor and encourager through this study.

I wish to acknowledge generous financial assistance from the following sources:
The Murrin Fund,
The Macmillan Fund
The Bishop of New Westminster

The names of all software mentioned in this paper are the registered trademarks of their respective manufacturers.

+

To a Vision
of
Email Communication
for the Church
that will bring
priests, parishes, and people,
together

+

To Beverley, my wife,
who supported me faithfully
in the work
and the writing
of this Project,

and
To the Right Rev'd Michael Ingham,
Bishop of the Diocese of New Westminster,
who first enabled me
to catch the
vision.

TABLE OF CONTENTS

INTRODUCTION 1

THE DEVELOPMENT

HISTORY 4

THE MOVE TO A FIRST CLASS CLIENT/SERVER SYSTEM 15

THE DIOCESE NOTICES 21

THE BEGINNING OF TRAINING MODELS 25

THE NWNET TRAINING MODEL 29

A SURVEY OF EMAIL SYSTEMS IN ANGLICAN/EPISCOPAL CHURCHES IN NORTH AMERICA 45

CONCLUSIONS 63

THE MANUAL

THE NEED FOR A DIOCESAN COMMUNICATION SYSTEM 1

SETTING UP CONFERENCES 9

MODEMS 17

CHOOSING THE COMPUTER 26

BROCHURES 32

THE OPERATING COMMITTEE 35

POLICY STATEMENT FOR A DIOCESAN SYSTEM 37

USE OF THE INTERNET 39

QUEST — THE ANGLICAN ONLINE INTERNATIONAL CONNECTION 42

COSTS 46

REVIEW OF SOME OTHER BBS PROGRAMS 50

BIBLIOGRAPHY 54

APPENDIX A: **61**

APPENDIX B: **62**

APPENDIX C: **63**

APPENDIX D: **68**

The Development of NWnet: An E-Mail Communication System for the Diocese of New Westminster

INTRODUCTION

... your young men shall see visions, and your old men shall dream dreams...
Acts 2:17.

Communication is basic to being human. We talk, we draw, we gesture, we sing, we dance, and we write. And how we have written! Over the centuries the men and women have written volumes, so that libraries groan with shelves full of books. And each day, new books are added, new readers found. The Church is no different.

The 20th century has added a new dimension to writing. With the help of the typewriter, the computer, the word processor, the copying machine, and the fax, the Church organizations have deluged parishes with paper — letters, forms, printed materials — most of which are labouriously stashed into envelopes, addressed, stamped, and committed to the care of the Post Office, for collection, storage, and eventual delivery.

Pity the priest, or if he or she is lucky enough, the secretary, who must open, sort, read, and file this immense bulk of paper, all of which is supposedly necessary to keep a modern parish operational. So much of it is wasted, so much is delivered too late

for maximum use, so much must be recopied, and distributed, so much is food for the shredder and the recycling box — only to be made into paper to begin the mad process all over again. Trees sacrifice themselves for the system in amazing numbers.

From the point of view of a Diocesan Synod Office, the expense is moderated by the fact that it is all bi-directional. The Synod Office sends, and the parish office receives. One informs, the other is informed. The information is decided, and then delivered. But there is no response, no interaction, no two-way communication, no human interchange. Computer Communication is going to change all that.

Now, by using a Diocesan Email System, information can be sent by the Synod Office electronically, immediately, easily, directly to priests, parishes, and people[1], without paper, without print, without delay, and with virtually no cost. And the same system can be used for feedback, for conversation, for dialogue, for human interaction. Priests can share ideas or concerns, laity can dialogue equally with clergy, youth can dialogue with those who are experienced and knowledgeable and both can gain. Committees can share minutes, papers, and ideas in an open and public way, such that everyone can have input. Though a Diocesan system can be connected to the Internet, yet depending on the kind of system, it can be protected from the interference of troublemakers and adolescent minds by a rigid system of registration. It can be both public and private. It can share the Faith,

[1] I certainly should include Deacons as well, but I was enamoured with the potential of the 3 "p"s — and so please read Deacons into every place where I have said "priests, parishes, and people".

and listen to the new ideas. It is a system that honours the humanity and ecology professed by the Church. Computer communication is a system whose time has come.

This paper is divided into two sections: the Development of a Computer Communication System, and the Manual detailing the installation of such a Computer Communication System in the Diocese of New Westminster. The Development section will detail a Model of a Training Workshop for priests and laity, and evaluate its effectiveness. The Manual will include descriptions of the various sections of such a system so that a similar Communication System could be replicated in any other Diocese. Finally, the paper will include a Survey of the Anglican/Episcopal Dioceses of North America in regard to how they are, or are not, making use of email communication for their Dioceses.

THE DEVELOPMENT

CHAPTER ONE

HISTORY

It would have been the fall of 1989, when I walked into a Computer Store on Broadway Ave. in Vancouver and asked for advice on building an electronic Bulletin Board System for the Church. Considering the number of BBSs[2] around in North America, over 10,000, one would think that this would be a fairly simple request. Surely, information and even suitable BBS programs would exist — perhaps could even be purchased from a computer store. Such was not the case.

It seems that, in spite of the large number of BBSs in existence, most are hobby systems, are designed as shareware, and are not usually available for sale in stores. They are assembled in parts, utilizing a number of different programs, none of which are guaranteed to work with one another, and each differing according to the ideas and the passions of the individual BBS operator, or Sysop. [3]

---

[2] BBS equals Bulletin Board System.

[3] Sysop is short for System Operator, pronounced "sis-op"

With the help and instructions of a BBS Sysop[4], I was able, soon after Christmas in 1989, to find programs, install modems, and generally produce my very first BBS. It comprised the following shareware programs: Front Door 1.19[5], Maximus 2, TosScan[6], BNU1.70, a fossil called XOO, and Squish. As well, I needed a number of programs that could compress and uncompress messages and files, amongst which were PKZIP, LHA, ARJ, and PAK. My education had begun.

Commercial computer programs are usually tested, refined, corrected and retested, long before they are released to the buying public. That is expected, because prices charged can be pretty high. However, most BBS software is shareware, and is usually warranted to do nothing but use up space on one's hard disk. Certainly, they are never warranted to actually mate flawlessly with any other program, no matter what they were designed to do. Thus, producing a BBS with shareware programs can be a demonstration of all that is worst and most frustrating in the realm of computer technology; besides, computer communication programs are just about the most demanding and tricky kinds of programs to produce. It is no small feat to actually assemble the various shareware programs of your choice, into a working communication system. It is amazing that so many are assembled by teenagers, who simply desire to run a

[4] Albert Pasternak, the clerk in the computer store, that I first approached for advice on starting a BBS.

[5] Later upgraded to Front Door 2.02

[6] Not shareware, as I had to purchase it privately from Albert Pasternak.

shareware BBS into which others may dial, in order to read, write, or even to Chat in real time.[7]

That is not to say that commercial programs are not available — they are. And this recent decade has seen the development of some excellent commercial programs. They are sold, for the most part, by the development company, or by commissioned salespersons, and not sold in computer stores. Most shareware programs were developed to run in a DOS operating system.[8] The majority of new commercial communication programs use Windows as their operating system. Commercial communication systems are expensive, costing from about $600 for the simple ones, to over $8000. for the more complex programs.

With the help of advisors, mostly teenagers, I began the task of operating and upgrading my simple shareware communication system. It enabled me to operate and interact with the BBS, and to invite others to dial into it, to read, write, or discuss different issues based on the topical interests of the particular BBS areas. The computer was connected to its own telephone line via a modem, which enabled a digital system (the computer) to communicate through analog telephone wires. The computer, which was

---

[7] Real Time is the time in which we live at the moment, vs. Virtual Time, which is time as visualized within a computer program. Virtual time is quite unrelated to Real time. So to Chat in real time is to write messages to another person, who is reading the message at that moment, and responding while the original writer is watching and reading.

[8] DOS, short for MS-DOS, or Microsoft Disk Operating System. The Operating System is the program(s) that actually runs the computer in the background, and is the foundation upon which all the other programs run. There are few Operating Systems: the most popular now being variants of Microsoft Windows. Windows program up to 3.11 all needed MS-DOS to operate; all Windows OS programs since then reject DOS as unneeded, since they themselves are Disk Operating Systems, as well as being a Graphical Unit Interface (GUI). Windows 95 and Windows NT 4.0 are examples of the latter. Other OS programs are OS/2 and Mac/OS and Unix.

always turned on and running, detected incoming telephone calls, answered the phone, and immediately ran the communication software which enabled the caller to see on his/her computer screen an image of the called BBS program. The caller's computer could then interact with my computer program, enabling the caller to read or write messages from his keyboard but using the program in my computer, such that messages could be sent to the mailboxes of other users. The caller could read messages left by other computer users at some other time, and respond to these messages with their own notes. The communication program provided a number of areas of topical interest, and these areas were often called Conferences or Meetings.

While the interaction was proceeding, the caller's computer was actually controlling my computer, so that it could not be used by others at that moment. In other words, when the caller typed the letter A on his keyboard, the host computer [9] registered that letter A, and then sent an echo of that A back to the callers computer screen so that he/she could see what had been typed. While a message was being typed, the calling computer was controlling the host computer. For shareware programs running on DOS, this was a simple model, though not very convenient, since the host computer is a slave to the calling computer. However, for commercial programs, this model proved too cumbersome and slow. Commercial operators developed a client/server model in which much of the program was being run on the caller's computer, and only the basic server program was being run on the host computer. This allowed the caller to type a complete message into his computer, and, only when it was finished, would it be sent to the host

computer for storage or onward transmission. Using the client/server model, many users could be accommodated at once — sometimes as many as 250 users at the same time.

It took several months to assemble, configure, and test the simple BBS system. Some of the problems were traced to the use of the XOO fossil (which answered the modem when a caller rang), and BNU1.70 was substituted. Front Door 1.99 was upgraded to Front Door 2.02 in order to refine the system. Front Door handled the user registration, and the interchange of messages from one BBS to another. Once the fossil (BNU) had detected the activity of the modem, Front Door answered the call; if it was a user calling, Front Door passed the information to Maximus 2.0 which was the part of the BBS program that interacts with the caller. If the caller was another computer programmed to receive and pass on mail, Front Door handled all the transactions, without passing the call onto Maximus. In other words, Maximus was the BBS program that responded to the keyboard of the caller, and stored messages in Conferences; Front Door was the BBS program that connected to other BBSs, passed packets of messages back and forth, and generally ran behind the scenes automatically. A final program called Squish was used to sort mail, and place it into Conferences, as well as compressing packets of mail for sending or uncompressing packets of mail that had been received. The whole system would run reasonably well, provided the sysop maintained the programs, and rectified the errors. It needed a hands-on sysop, who had the time and inclination to "tinker" with the communication system to keep it operating. I announced the opening of

[9] The computer which is actually running the BBS program.

NWnet to the priests of the Diocese at a Clergy Conference in June 1990. Interest at the beginning was phenomenal by its absence.

The original hardware that was used to run NWnet was a 386 PC computer, with two external USRobotics 14400 modems, situated in an upstairs bedroom of my home. One separate telephone line was used at the beginning but, by 1995, three additional lines had been installed by the telephone company. To keep costs down, only 2 of them were ever actually in use at once. NWnet multitasked[10] under Windows 3.1, together with all my other personal computer programs. I had been told emphatically that it was not possible to multitask a full time BBS under Windows 3.1 — but it performed quite well. The only problem that I could discover was an 11 second pause between the time the computer answered the call to the time when letters began to appear on the caller's screen. This only happened at the beginning of the call, not at any other time during the users session online. All equipment and software were purchased by me; there were no grants available. For the first few years, all equipment, phone lines, software, brochures, and Workshops were funded personally. In 1994, I upgraded the computer to a 486DX100, and in 1995, I upgraded the size of the hard disk to an 810 meg size. In 1996, after making a presentation to the Administration and Finance Committee of the Diocese of New Westminster, the Diocese agreed to help with some of the funding. With their agreement, I purchased a 486DX100 PC computer with 24 meg of RAM, and a 1.1 meg hard disk to operate NWnet using Windows NT 3.51 and the First Class Server program.

[10] Multitasking is having the computer run several different programs at the same time. For example, the computer could answer a caller, and run the programs for NWnet behind the scene, while I was working in a Word-processing program at the same time — with neither program interfering with the other.

The computer would be the property of the Diocese. Later that year, I upgraded my personal computer to a Pentium 100, with 32 meg of RAM, and a larger hard disk. It is with this computer that I accessed the NWnet computer which was relocated at the premises of the Internet Provider, in Port Moody, BC. In 1997, the NWnet Server computer was upgraded to a Pentium 120, with 32 meg of RAM, and two 1.1 gigabyte hard disks. The second hard disk was used as a backup.

NWnet operated from the June of 1990 until December of 1995 using a simple "hobby type" BBS communication system. By the end of 1995, there were over 400 registered users, with approximately 30 to 40 calls each day. It was tied into several networks, primarily Fidonet, and experimented with an internet connection as well. During 1993, I set up a new network, called Anglinet-BBS, and this Anglinet system connected together a number of Anglican BBSs, primarily ACTS in Victoria, BC, and in Ucluelet, BC., ChurchLight in Sudbury, Ontario, Yukonet in the Yukon, and Dawn Abbey in Nova Scotia. This Anglinet network used Fidonet technology, and continues to exist and thrive today. Attempts were made to include an Anglican BBS in Edmonton, and to develop one in Kelowna, BC, but these came to naught. Several Conferences in Anglinet were copies of Meetings on Ecunet.[11] Many hours were spent copying messages from Anglican News and Sermonshop to NWnet so that users on NWnet could at least read these interesting notes. However, no actual two-way connection with Ecunet has been possible, due to differing protocols, and the clash between a pay-system and a free-system.

[11] Ecunet is an Ecumenical Network, primarily in North America, set up to connect clergy and lay leaders into one system, whereby they can exchange mail, and exchange ideas on over 6000 Meetings. There are about 10,000

In 1992 and again in 1994, I approached the Communications Committee of the Diocese for approval of the email system as a Diocesan project, and possible funding. Presentation of the project was accompanied with brochures, and printed briefs. Each time I was thanked for the presentation, but the request was rejected. It was the combined wisdom at that time of the Communication Committee that electronic communication was not needed in the Diocese, that no one would use it, and that email communication was not a proper subject matter for a Communication Committee. However, after the second rejection, I approached the Diocesan Administration and Finance Committee asking for funding assistance of approximately $1300.00 to pay for the monthly charges for the telephone lines and the printing of the brochures. It was granted; and this annual funding has continued to this day, with some increase over the years. [12]

To generate understanding of the concepts of email in the Diocese, I produced a brochure each year for distribution at Diocesan Synod in May. A table was requested, and a computer was rented and set up on the table, with 100 feet of telephone line strung out to connect with a distant telephone plug. I was thus able to distribute information about NWnet to priests and lay delegates every year, and to allow them hands on access to NWnet whenever they wished during Synod. The brochures always contained a simple explanation of how to connect to NWnet, and reminders that it was all "free of charge".

---

users in Ecunet. Ecunet is a pay system, costing $11. US per month, plus online time, plus $75 US for the excellent Client program called Convene 2.

[12] The grant has increased to $1800 per year, plus an additional grant towards upgrading the NWnet computer.

In the spring of 1995, I attended the Ecunet Annual Conference in Baltimore, Maryland. There I was introduced to members of the board of Quest, the Online Communication system for the Anglican Communion. Quest had been set up by Lambeth 1988 [13], with the intention of becoming an email network that would connect all parts of the Anglican Communion, and provide News and other information from diocese to diocese. Though much work had been done on the provision of information, the actual online network had not been produced. It was at this meeting at Baltimore that members of Quest met and decided to create a pilot project connecting Dioceses in Australia, South Africa, the Episcopal Church of Scotland, and NWnet in Canada, using First Class Client/Server software set up on a Server to be located near Chicago, USA, funded by Trinity Funds in New York City, USA. The connection to each diocese would be done through the Internet. Each diocese in the pilot project would setup the First Class Server Software on at least one computer in their diocese, and connect their own system to that diocesan server unit. Then, several times each day, the Diocesan servers would connect to the main server in the USA, presumably through the Internet, and exchange messages and information with each other. Each of the 4 partners in the pilot project would supply the hardware, and the trained personnel; Quest would provide the First Class Client/Server software, purchased from SoftArc. I was thrilled; it was a chance to move NWnet from shareware software to commercial Client/Server software and to join with Quest, the International Anglican online system. I assured the members of Quest that I would provide complete cooperation from this end.

---

[13] Lambeth Conferences are meetings of the Bishops of the Anglican Communion, who meet together every 10 years at Lambeth Palace (residence of the Archbishop of Canterbury), England. The Lambeth Conference makes non-

Though the intention was good, other things occupied the time of the members, while negotiations were arranged with SoftArc [14], in Markham, Ontario, Canada. I waited from May to January, and then came the news — funding could be found for Dioceses outside North America, but not for Canada or the US. NWnet was cut out. The software was not to be made available through Quest. And NWnet could not afford thousands of dollars of software.

It was bitterly disappointing. I had depended on receiving the software for free, and had received funding to purchase a Diocesan owned computer that would run NWnet. I had begun work on my Doctor of Ministry degree, planning to use First Class Client/Server software for the project. Other plans had to be made.

At first, I considered other commercial communication systems. There were several excellent possibilities. I even went so far as to purchase "PCBoard" BBS client/server communication system [15], "World Group" BBS from Galacticomm [16], and "Power BBS for Windows"[17] for comparative purposes. Having examined each of them, I set World Group BBS up on the NWnet computer during January and February. It was a

---

legislative decisions for the Anglican Communion, decisions which must be approved by each Diocese thereafter to become law in the Church.

[14] SoftArc Ltd., is the manufacturer of First Class Client/Server Software. First Class was originally developed for the MAC Computer system in 1992, but in 1995 was redeveloped for Windows NT 3.51. It operates on over 40,000 different sites worldwide, in many different languages, and is second only to Novell in its worldwide applications.

[15] PCBoard BBS is a product of the Clark Development Company, Inc. 3950 South 700 East, Suite 300, Murray, Utah, USA 84107-2173. Telephone 801-261-1686 I purchase version 15.2 PCBoard also makes a number of other advanced BBS systems, like "World Group" BBS.

[16] World Group Online Interactive software from Galacticomm, Inc. 4101 SW 47th Ave., Suite 101, Fort Lauderdale, Florida, USA, 93314, 1-305-583-5990; sales@gcomm.com

good system, considerably better than the previous shareware programs. Though it used DOS as its operating system, the Client software used Windows 3.1. This made the Client software easy to understand and much easier to use. The icons were good, and the instruction intuitive. But, if Quest was ever to actually begin operating using First Class Client/Server software to create a worldwide Anglican system, a system using "World Group BBS" software would be unable to connect easily to Quest. Besides, the price for the proposed new completely Windows upgrade of "World Group BBS" system would cost more than $2000.00 for all of its software. That would mean increasing the amount of personal funding that would be needed. Without financial support, any of the available systems were too expensive to be handled on a personal basis.

I wrote to SoftArc Ltd., in Markham, Ontario, and told them my story. I shared with them my vision of Diocesan communication, and my proposed project for the Doctor of Ministry degree. I followed up the letter with several phone calls. And God certainly blessed my action! The SoftArc Corporation wrote back that they had considered my project and proposal, and they would send to me all the software requested, without charge. I was ecstatic! God had opened a door for me that I had thought closed. NWnet was going to move ahead.

---

[17] Power BBS

CHAPTER TWO

THE MOVE TO A FIRST CLASS CLIENT/SERVER SYSTEM

The arrival of the First Class Client/Software from SoftArc, Ontario, meant that a number of changes needed to be made. The computer that was to be the server for the system was upgraded to 24 meg of RAM, and Windows NT 3.51 was installed. This installation took a long time to get correct. The instructions for installation are written for experts, not for novices. One could puzzle over the installation instructions for many hours, and still not understand the language. Nor was it easy to get help. Most people do not run Windows NT; and those that do tend to be in the corporate mode, and not interested in helping a lone individual. But when one turns to Microsoft (Seattle) for help, one is told to call Microsoft (Canada) in Toronto. After waiting for a long time on the telephone for Technical Support from Toronto, one discovers that there is no one at Microsoft Canada who can give Technical Support for Windows NT. One must telephone the US; and then one discovers that Technical Support for Window NT is provided by the Digital Corporation, who charge $150.00 US for each and every incident. It took a long time on the phone before I discovered that the first incident can be treated as a courtesy, and technical support will be given free of charge for that first incident. However, after describing the problem, that Windows NT 3.51 kept crashing — sometimes as many as

four times in one hour, I was passed from technician to technician with no satisfaction. This problem continued for six weeks, until I discovered, quite by accident, that I had a faulty eight meg memory chip. Since it was difficult to tell which eight meg chip was causing the problem, I replaced them all with new ones, and the problem was solved.

In order to run the First Class Client/Server software, a dedicated computer was necessary. I approached the Diocesan Administration and Finance Committee with a proposal that the Diocese should supply the funding to purchase a computer for NWnet, that would be located at the premises of the Internet Provider, but would be owned by the Diocese. I estimated that a 486DX100 would be sufficiently powerful to run Windows NT 3.51, provided that the computer had at least 24 megs of RAM, and a large hard disk. I proposed that the Diocese provide $2500 not including taxes[18], while I would personally provide a copy of Windows NT 3.51, and the NWnet Fund would provide the two USRobotics 28800 external modems. Further, our Internet Provider had agreed to provide the space to connect NWnet to the Internet, for an income tax donation each year. Questions were asked at the presentation about the type of computer, and the appropriate speed necessary to run the system. An opinion was stated that we should purchase a Pentium instead of a 486. My response was that it was better initially to have more memory than greater speed — that it was better economically to put funding into memory than into processor speed. [19] The argument was accepted with understanding, and the

---

[18] Taxes in Canada at the time included 7% Goods and Services Tax, plus 7% Provincial Sales Tax.

[19] The example that I gave was as follows: A secretary was provided with a desk and a filing cabinet. If the secretary had a small desk, he/she would need to travel many times back and forth from the desk to the filing cabinet, getting and refiling documents, since the desk was too small to hold very many. However if one could quadruple the size of the desk, the secretary could spend more time actually doing work at his/her desk, instead of spending time running back and forth to the filing cabinet. Therefore it was better to increase the size of the memory (RAM), so that the moderate processor could work more efficiently, rather than increase the speed of the processor and have it constantly spending time accessing the hard disk rather than processing data.

Administration and Finance Committee passed the resolution, and funded the new Diocesan computer.

The new NWnet computer was purchased from a local computer outlet, and Windows NT 3.51 was installed. The installation, as I have detailed above, was not as simple or easy as it should have been. But the replacement of the bad memory chip solved the problem. By that time, the First Class Client/Server programs had arrived, and installation began.

First Class installation is simple and easy — and free technical support is available from SoftArc. The Manual comes with the software, and the installation is almost automatic. However, once installed, the program expects to have a knowledgeable person present who understands the questions asked during the Setup. Some are straightforward, others require understanding of confusing computer language. Consulting the Manuals is often not much help — Instruction Manuals are usually written for experts. It is frustrating to struggle to understand a particular setting for the system, then to phone technical support for some explanation, only to be told that such and such only applies to LAN installations, and should be ignored.

By April 1996, NWnet was up and running on the new computer, using Windows NT 3.51, and First Class Client/Server 3.0 software (very soon upgraded to version 3.1). The server, after testing, was open for use by callers. An announcement was sent to all parishes through Diocesan mail, and brochures were printed for distribution at

the Diocesan Synod of May 1996. The NWnet display was setup at Synod, and an Instruction Manual, and disks containing the First Class Client program, were distributed.

At this time, the telephone number was changed. Until March 1996, there had been two numbers — 944-0622 the direct phone line to NWnet, and 878-0466 a prime line that call forwarded to 944-0622. There were two modems on 944-0622, which was actually two telephone lines. The advantage of the Prime Line was that it was a local call from anywhere in Vancouver, White Rock, West Vancouver, and all points east to Langley. The disadvantage was that NWnet was charged for that Prime Line, plus the other two telephone lines. The cost of 944-0622 was relatively inexpensive, since it was rated as a residential line.[20] Now, with the advent of the new First Class Client/Server system, the Prime Line 878-0466 became the only number, and this line call forwarded to two new residential lines connecting to the modems. This allowed NWnet to change the telephone numbers of the actual modem lines, without any necessity to inform the users. The Prime Line became the only advertised telephone number, since it could handle up to five calls at once, and would call forward to the next available telephone line that was connected to a modem. The new brochures reflected this change to 878-0466.

There was some difficulty at first keeping the modems operating on the two phone lines. They often refused to reset themselves automatically after a user departed (or in ordinary terms, to hang up). This was solved by setting the First Class© Server

[20] According to BCTel policy at the time, from 1 to 3 lines coming into a home could be considered as residential — but the addition of a 4th line made all of them business lines, and the telephone rates increased by 150%. It is the policy of NWnet to restrict the number of lines to 3 for this reason.

program to hang up (DTR Hangup - ON) and the First Class Client programs to not hang up (DTR Hangup - OFF). Once that was changed, the modems operated perfectly without modification.

The move to First Class software introduced a number of advantages. The communication software was now Windows or MAC driven. Client programs were made available for free; both those for the PC and those for MAC. [21] The new software was "point and click". With a mouse, one pointed to an Icon on the screen, double-clicked the left mouse button, and the operation would happen. Messages were organized in Conferences, except for one's personal Mailbox. There was a Chat Conference, where people could type notes to each other in real time, and see the responses. This was only possible when more than one person were actually online at the same time. NWnet has the capability of having up to seven people online at the same time: two via modem/telephone lines, and five via the Internet connection. The whole was arranged as an icon driven "Desktop", in which Conferences could contain any number of sub-Conferences, all accessed by "point and click" methodology.

Some time later, the possibility of sending and receiving to and from the Internet was made available. NWnet was moved to the Internet Provider (IP)[22] and connected to

---

[21] The First Class Client programs are designed for both PC or MAC systems; however, once the user has connected, the Desktop looks the same for both systems, and all the controls work the same. So once a person has been trained on one system, he or she can operate either computer with ease. There are no different commands to use, and the screen looks virtually identical.

[22] Wimsey.com

the Internet by a T1[23] connection, using UUCP[24] protocol. This allowed Internet messaging back and forth, for free, but did not allow for "surfing the Internet". If one needed to "surf the net", one could make one's own arrangement with an Internet Provider privately. All this service was made available to priests, deacons, parishes, and laity of the Diocese, free of charge.

Conferences, for the most part, were open to every user of NWnet. However, it was possible to create private Conferences, open only to specific users. Private Conferences were organized for the "Bishop, Archdeacons, Regional Deans and Dean"[25], for the "Communication Committee", for the "Technology Task Force", for "Synod Office" employees, and for a number of other users. These private Conferences operated exactly the same as other public Conferences, except that they could only be accessed by specific users. For each of these Private Conferences, I assigned a Moderator, since I was not usually a member of a Private Conference. This allowed privacy, including privacy from the Administrator.[26]

---

[23] A T1 Connection is a specific connection with the telephone company equipment that provides a wider bandwidth than is normal over a standard telephone wire. The wider bandwidth allows much more date to flow in both directions. It is also considerably more expensive than a normal telephone connection. ISDN is another type of connection.

[24] Unix to Unix Communication Protocol --- a standardized method of sending packets of characters from one Unix computer to another. The Internet operates with Unix as its Operating System.

[25] "Archdeacons and Regional Deans" was later changed to "BARDD" standing for Bishop, Archdeacons, Regional Deans, and Dean".

[26] Strictly speaking, the Administrator could access these Private Conferences, but as "Ron Barnes", I could not do so. "Ron Barnes" had no access to the Private Conferences. I found it was important to make this clear to others — there were those people who assumed that I "got my jollies" from reading all the messages in Private Conferences. Not so; the job of a priest precludes that kind of time wasting. Besides, a priest is bound by confidentiality — sometimes called "the seal of the confessional". Messages written as private mail is 100% confidential, and cannot be seen by anyone, including the Administrator.

CHAPTER THREE

THE DIOCESE NOTICES

The Diocese was now becoming intrigued with NWnet, in its new Client/Server form. In the fall of 1995, a Task Force was set up by the Communications Committee to study and report on NWnet, on Computers in the Diocese, and on the possibility of a Web site for the Diocese. It was supposed that only about twenty parishes in the Diocese owned or used computers in their parish life. Since I was sure the number was more, I volunteered to do the "Study on the Use of Computers in the Diocese".[27] In the end, I was able to document that seventy-two of the eighty parishes actually owned a computer, or used a computer that was owned by the priest. A majority of the parishes used Windows in some form; only two parishes used Macintosh. More than seventy five percent of the clergy wanted some form of computer training, sponsored by the Diocese, and most were interested in further training in Computer Communication. The results were surprising to some, but a breath of fresh air to me. The results of the Study overcame some residual resistance from the Communications Committee towards the use of computers in the church.

[27] Report of the Study is attached in an Appendix

Though the Task Force on Technology in the Diocese produced a favourable report on NWnet, there was no suggestion during 1996 of diocesan approval for NWnet. In the fall of 1996, the chair of the Task Force [28] produced a "Business Case" for the adoption of NWnet as a Diocesan approved system. Diocesan "wheels grind slowly", and by the end of 1996 this "Business Case" had still not been approved by Communications Committee. However, in January 1997, Communications Committee finally discussed and did propose NWnet as an official electronic communication system for the Diocese and forwarded its recommendation to Diocesan Council for discussion and approval. On February 11, 1997 at a Diocesan Council Meeting, after a length discussion on legal questions,[29] NWnet was finally "recognised and adopted as the official electronic Diocesan Bulletin Board System". It was a milestone. It had taken six and a half years, but the "seal of approval" had finally arrived. Now Diocesan staff could begin to use NWnet officially to send material to parishes and priests. A new plateau in the life of the Church had been reached. Well, that was the hope.

It was not to be clear sailing. Problems were raised almost immediately as to who controlled the Conferences. If it was an "official" system, did that mean that the Diocese needed to control everything that was written on the system? Who would be the

---

[28] George Coghlan

[29] A number of Council members were concerned about pornography, confidentiality and the potential of abuse on an email system. Even though they had all received a four page document explaining the benefits of such a system, the questions suggested that many members had not read the documentation, nor did they understand electronic communication. It became obvious that people who do not use email systems have a confused understanding of such systems, perhaps as a direct result of reading negative hype about the internet in newspapers. Much education still needs to be done amongst the average Church member. The NWnet proposal was backed by a great deal of prayer — and I prefer to believe that it was this prayer that in the final instance created the positive vote. The final vote was about 25 to 4, with about 5 abstentions. The approval of NWnet was a high point for me after six and a half years of education.

controlling person? How liable was the diocese for differing opinions expressed in any of the Conferences? Did this mean that all public Conferences, other than the "Anglican Chat Conference" should be controlled by the Diocesan Office? If so, it spelled the end of "public" conferences. How "official" did a Diocesan Email system have to be?

The Report of the Technology Task Force had one good result. Organizations of all types tend to resent individuals beginning a project. They prefer to support those projects that are conceived by members of their own committees, and approved according to organizational guidelines before the project is begun. Call it jealousy, call it control, call it fear — whatever it is, most church organizations are no different in this case from secular groups. By arranging for the Task Force to spearhead the move for Diocesan approval, the Communications Committee was able to think of the NWnet project as their own. With these thoughts in mind, in the fall of 1996, I formed an "NWnet Committee" comprised of 4 people, including myself, whose task it was to cooperate in the running and improvement of NWnet. The Committee was given a private NWnet Committee Conference on NWnet[30] through which committee members could share ideas, consider criticisms, and discuss improvements to NWnet itself. Being a private Conference, we knew that all our notes would be private to our eyes only.

In the fall of 1996, SoftArc released its version 3.1 of the First Class Server and Client. This necessitated writing again to SoftArc and requesting the upgrades. They responded again by generously sending their latest upgrades for free. Inserting the

upgrade into the original server program was simplicity itself: one click on *a:\setup*, and the program does the rest. First Class Server 3.1 together with First Class Client 3.1 added an easy method to reply to a message, and added several other smaller features. Users could download the Client upgrade by simply double-clicking on the File Attachment in the File Library on NWnet, and the latest upgrade would be sent to their own computer. Then, after unzipping[31] the upgrade, they could click on the setup file, and the upgrade would be automatically installed to their own system. Most of the users upgraded within a week to the new program. And all who did, liked it very much. In the spring of 1997, SoftArc again upgraded their system to First Class Client/Server 3.5. This upgrade added a Spell-checker and an Offline Reader to the abilities of First Class. Since version 3.5 was too large to copy to one disk, I preferred to freely distribute version 3.1, and allow users to download the upgrade from the File Library on NWnet. Most users did exactly that.

One of the "joys" of being a sysop is the fielding of questions related to the operation of NWnet. Through the auspices of the Technology Task Force, a Manual was prepared to help users learn the First Class Client. The Manual was specifically designed for the use of NWnet. [32] It was available for purchase at the Synod in May 1996, along with a Manual for Installation of the Client program.[33] These Manuals were distributed to all priests and interested lay people, together with a copy of the First Class Client. It was upgraded in May 1997 to include information on First Class Client, version 3.5.

---

[30] NWComm

[31] Using PKUnZip

[32] The NWnet Manual was written by Ms. Shelley Reeder.

[33] The Installation Manual was also written by Ms. Shelley Reeder.

CHAPTER FOUR

THE BEGINNING OF TRAINING MODELS

The provision of Instruction Workshops for the use of NWnet is an important part of setting up of a Diocesan system. No matter how good the system is, no matter how much information is posted to it, unless the priests and lay people are trained in its use, it will provide little good. Of course, teenagers may need little training — they pick up the use of computer programs at school or from friends — but a priest of some twenty-five or more years experience is unlikely to learn the program intuitively. Even if the program is easy to learn, many adults are confused when placed in front of a new computer program, and unsure of what to do. Training Workshops, that combine an on screen demonstration of how the programs can be used together with "hands on" experience in working with the software, are necessary for most people.

Thus it was, with a feeling of pleasure, that I was asked to produce Training Workshops for clergy and laity around the diocese. Within a short time, I was invited to present two separate Training Sessions at St. David's Tsawwassen. These sessions were designed to last for three hours, from 10:00 am to 1:00 pm on a Saturday morning. It was necessary to have access to a telephone line so as to connect with the NWnet server for demonstration purposes. To add to the instruction, I rented a computer equipped with a

14400 bps modem, and three extra SVGA monitors. All four monitors were connected to a single computer (usually my laptop, so I could use the built-in screen) through a VGAMultiplier[34], allowing the monitors to simultaneously reproduce the same image as was shown on my laptop screen. By sitting the trainees in an arc around a table, it was possible to place the monitors in such a way that up to twelve people could see one of the four monitors, and follow the action on screen. I was able to type on the computer keyboard, or click with the mouse while everyone watched the process on their closest monitor. For a group of about twelve people (three per monitor), this provided a fast and interactive method of demonstrating the program. Then, once the instruction was completed, and questions answered, the computer could be connected by modem to NWnet so that each of the participants could experiment using the Client software, while others watched and made comments. This "hands on" experience with a small group was an excellent methodology for teaching the use of NWnet. Registration and usage of NWnet increased after every Training Session.

It was harder to create Training Sessions for the only clergy. Offers were made regularly to set up Training Workshops for Clergy in each Deaneries, but most were ignored or rejected. One Training Workshop was set up in a Deanery in West Vancouver; the Training Session was designed to run immediately after their regular Deanery Meeting. However, though the Training Session had been planned well ahead of time, very few of

[34] The VGA Multiplier is a connection box that allows up to 4 computer monitors to be connected to one computer. My cost was $165. Can. I use this connection box whenever I am giving a demonstration, since no more than 4 people can comfortably watch one computer screen. An alternative would be to use an LCD panel combined with an overhead projector, allowing a dozen or more people to watch the demonstration. LCD panels however retail for over $6000.00 Can, and rent for $350. Can. per day. The price difference is considerable.

the clergy stayed for the actual demonstration. Other things seemed to take priority. The lesson that I learned was that until the Diocese decided that it would actually use the NWnet system, few of the clergy were willing to take the time to acquire the skills necessary to use the system.

Though this learning was discouraging, plans were laid to continue Training Workshops for NWnet across the Diocese. Notices were sent via "Clergy Mailings"[35] inviting requests for Training. Though the Survey of Computer Usage, done in the fall of 1995 indicated that most clergy wanted training in computer communications, few actual requests for training were received; training seems to be something that everyone wants but few rate high on their priority scale. This priority judgment could certainly change if the Diocese decided to send "Clergy Mailings" and other information to priests through NWnet.

By the fall of 1996, there were one hundred and ten users registered on NWnet and using it frequently. At one time in November, the number did rise to one hundred and twenty five as new people registered; however the Server had been programmed to delete users who had not accessed the system for sixty days. This resulted in about fifteen persons, who had registered to see what NWnet was about and then had not accessed the system for a while, being automatically deleted, returning the user list to approximately

[35] "Clergy Mailings" are the monthly mailings from the Synod Office to each parish of notices of meetings, letters, and other literature that are supposed to keep the parish informed. "Clergy Mailings" usually contain 15 to 20 sheets of paper, packed into one envelope, and are mailed through Canada Post to every parish and priest at a cost of approximately $1.60 to $2.50 each. Since the Diocese sends "Clergy Mailings" to about 190 addresses, the cost is at least $10,000.00 per year. Most of this cost would be eliminated if "Clergy Mailings" could be done by email, through NWnet — a considerable saving.

one hundred and ten regular users. This number remained relatively stable until the Diocese accepted control of NWnet, and made it an official Email system of the Diocese. The records showed that twenty five of these users were "Regular Users" who entered the system from the Internet, and eighty five of them were "Remote Users" who entered the system via a modem and a telephone line. Since NWnet was designed to have a maximum of fifty-five Regular users, and five hundred Remote users, there was much room for growth.

In the spring of 1997, arrangements were made to run two Training Workshops for NWnet, open to twelve clergy and laity in each Workshop. The response was so overwhelming that the number of Workshops was increased to four. In the end, fifty one persons took advantage of the Training Workshops, and the number of users on NWnet increased to one hundred and sixty three by the beginning of May. Over forty of these were diocesan clergy.

CHAPTER FIVE

THE NWNET TRAINING MODEL

Training is essential to the implementation of any Diocesan Email system. Some people, because of their interest in computers, or possible past experience, will have little problem connecting to and using the system. Most however will need some instruction. Thus a Training Model was designed, and Training Workshops established.

Four Training Workshops were scheduled in the spring of 1997. The first was held at Holy Trinity Church, Vancouver, on Saturday, March 15th, from 9 am to noon. I planned to cut off registration at twelve persons, but in the last week I had a number of phone calls from people wanting to come, and others from people who were not able to come. In spite of my efforts to limit the registration, a total of nineteen people actually turned up and participated, including two priests, one deacon, and sixteen lay persons. Two others arrived too late to take full advantage of the Workshop.

In my opinion, the ideal number of persons for such a Workshop is about twelve persons. This opinion is based on there being two separate telephone lines so that two persons can be online at any one time during the one hour "hands on experiential" section

of the Workshop.[36] More than that number will mean that not everyone will have a chance for a "hands on" experience with NWnet, a most valuable and important moment; this is exactly what happened at the first Workshop when considerably more than twelve persons attended. To add frustration to the "hands on experiential" session of the Workshop, the 14400 bps modem in the rented computer could not be initialized to run at its proper speed. The best that I could do was to initialize the modem as a 2400 bps modem — and this slow speed caused some frustration. Luckily the other computer[37] had an internal 28800 bps modem, and was able to connect quickly.

The second Training Workshop was held at St.Catherine's Church, North Vancouver on Saturday, April 12th, from 9 am to noon. Because of the enthusiastic registration, a third Training Workshop was scheduled for that afternoon, from 1:00 pm to 4:00 pm. At the second Workshop, twelve persons participated, including seven priests, and five lay persons. At the third (the afternoon) Workshop, nine persons participated, including four priests, and five lay persons. Several persons who had registered did not show up for the Workshop, so the expected number of twelve persons was not met.

A fourth Training Workshop was scheduled for Saturday April 26th, from 9 am to noon, again at Holy Trinity Church, Vancouver. This fourth Workshop was attended by nine persons, including two priests and seven lay persons. As with the third Workshop, several persons, who had registered, did not arrive.

---

[36] By using the VGA Multiplex box to power several monitors at the same time, the others can watch what is happening while the two persons learn how to go online and discover the abilities of NWnet.

[37] My own laptop, an ACER Pentium with a Megahertz PCMCIA modem.

To evaluate the Training Workshop, a series of Questionnaires were written. The Pre-Workshop Questionnaire was given to each Workshop participant when he or she arrived, and a Post-Workshop Questionnaire was given to them as soon as the Workshop was over. To gauge how well the participants were making use of NWnet, a third Questionnaire was sent to some of the original participants four weeks after they had participated in the Training Workshop.

The Training Workshop was best done with twelve people gathered around a table, with no more than three people watching one SVGA monitor. I have purchased a VGA Multiplier, which connected up to four SVGA monitors to my laptop. This allowed me to work on my laptop while watching the laptop's LCD screen, and at the same time to have the participants watch their closest monitor to see a copy of the image that I could see on my LCD screen. A better system would be to use either an LCD panel, placed on an overhead projector, which would display the LCD image on a wall screen. The advantage to using an LCD panel would be that more people could be accommodated during the initial demonstration. However, LCD panels are expensive — retailing between $4000 to $6000, and rent for about $300.00 per day. The best use active matrix displays. An alternative to the LCD panel would be an LCD projector, which eliminates the need for the overhead projector entirely. However these can cost upwards of $10,000.00 and rent for $350.00 per day. I believe that a diocese should purchase at least one LCD panel that could be used for computer software Training Workshops as well as Christian Education work of all types in the diocese. Presentations could be prepared before hand, using programs such MS PowerPoint, and presented easily and professionally to church

groups. With the use of such technologically advanced equipment, a Computer Communication Training Workshop would still need at least two computers with modems to allow participants to have a "hands on" experience of using the system.

The *Training Workshop* consisted of the following modules:

Pre-Workshop Questionnaires

These prepared questionnaires[38] were handed to each person as they arrived, with a request that they be filled out and handed in before the Workshop began. Coffee was also available.

Welcome and Explanation of the Content of the Workshop.

I advised them of the coffee that was available, the location of the washrooms, and the reasons for the Questionnaires. I also advised them that in addition to the Pre and Post Questionnaires from the Workshop, a third Questionnaire would be mailed to them in about four weeks time to measure the actual usage they were making of the system. I then gave everyone a Registration number for use on the Questionnaires.

Questions

I asked for and wrote down the participants initial questions on the overhead projector at the very beginning of the session. This is important because it gets their initial questions asked, and allows the trainer to answer them at some time through the Workshop. The Questions do not have to be answered at the beginning — only written down. Once the

participant has asked his or her question, and been assured that they would learn the answer that morning, they can put aside the query and attend to the Workshop itself. At the end of the Workshop, this initial list of participants' questions can be placed again on the overhead projector so that participants can see that their questions have been answered. This listing of questions also helps the Trainer know the concerns of the participants so that the Workshop can be tailored to fit those concerns.

NWnet Presentation

I used Microsoft PowerPoint© to create the Presentation[39]. This provides an initial instruction for everyone, and helps teach what can be expected of a Communication System. [40] It is here that I use the VGA Multiplex box, and four additional monitors. By connecting all of these monitors together, and then connecting this arrangement to the appropriate port on my laptop, I can run the Presentation from my laptop. It could be run from any computer. This arrangement with the four monitors was also used in the next section.

Online Demonstration

The Trainer demonstrates how to install the First Class Client on a standard computer, and how to set up the Icon on the desktop screen, making it easy to access NWnet. The Trainer then demonstrates NWnet by showing the Client onscreen, answering questions about setting up the Login sequence, then dialing into NWnet, while participants watch

---

[38] See Appendix D for copies of the Questionnaires.

[39] See Appendix C for the wording of the MS PowerPoint Presentation.

everything on the monitors. The Trainer answers questions as the demonstration progresses, and illustrates the process of

-Writing and sending a message
-Exploring Conferences
-Reading and responding to messages in the different Conferences
-Downloading a file from the Library
-Checking the names of other users
-Chatting with other users
-Building an Address List
-Inserting a Folder
-Sending Internet Mail
-Getting Help, and
-Disconnecting from the online session

This demonstration can be done several times, until people have understood the simple processes involved.

Hands On Experience

Each participant is invited in turn to come to one of the available computers, dial into NWnet using the NWnet Client, register online, and send and receive a message. If there are two computers being used at the Workshop, the participants can send a message to each other, in order to see what happens, and see how quickly the message is sent and received. This also gives participants a chance to use the "Reply by Quoting a Message" command by responding to a message sent to them. If another person, not at the Workshop, is using NWnet, a chance to initiate a Chat Session can be found. By leaving a message on the Important Notices Conference, prior to each Workshop, I ask that other modem users refrain from using the system during the scheduled Workshop times to allow the Workshop participants to register and experiment online. If a user does not leave the

[40] I also use the same Nwnet Presentation at large meetings like the Diocesan Synod. Using MS PowerPoint, the Presentation can be set to rerun automatically all day long on a simple colour computer.

system to the Workshop participants, it is possible to end their online time through a command on the Administrator's Menu. [41]

Distribution of Client programs and Instruction Manuals

Copies of the free First Class Client for NWnet, with an Instruction Manual that augments the teaching that has been done during the Workshop, are distributed. I have had to charge a small amount for the Manual to cover costs of copying.

Post Questionnaires completed

At the end of the time, the Post-Workshop Questionnaires are passed out, and completed before participants leave. [42]It is important that the Trainer remember to emphasise this or a number of participants will leave without completing the Questionnaire.

Thanks for Coming

The Trainer thanks everyone for coming, and gives out a telephone number where participants can phone for advice in the next few weeks. In each case, since no charge had been made for the Workshop, an opportunity was given for participants to make a donation.

---

[41] In spite of placing a large announcement in the Important Notices Conference, I did have to terminate one online user so that the Workshop participants could use both lines.

[42] It is my experience that if it is not completed at the Workshop, it is unlikely to be done at all.

I found it important to leave a note in the Important Notices Conference on the system, informing users of the upcoming Workshop, and asking them to refrain from using the system during the hours of the Workshop. During the second Workshop, I found a user who would not log off, so, as the Administrator, I decided to log her off the system immediately. To my surprise, she returned a minute later, and I had to log her off again. Since NWnet only had two telephone line connections, and since both of these would tend to be in use by Workshop participants, the request was designed to keep the lines clear. If both telephone lines were in use at the same time, the Trainer would need to use one of the Internet connections to enter the system. To enable this, a special Guest registration was set up ahead of time, as a Regular user, so that it could be entered from either the phone line or the Internet connection.

Obtaining the cooperation of the Churches for the holding of the Workshops was essential. The Workshop needed not only a comfortable room, with coffee, tea, and juice available, but also needed two telephone lines that could be accessed from that room. Since few church buildings have telephone connections to each room, it is usually necessary to run fifty to one hundred feet of telephone wire from the computer to connect with the closest telephone plug. The telephones attached to that line should be labeled with a note requesting that absolutely no one should lift the receiver from 10am to noon, without checking with the Trainer at the Workshop. Obviously the lifting of an extension telephone received will create "garbage" online, and usually end the connection. It is wise to check the church's telephone system before hand — if it is equipped with a digital telephone system, the modem connections will not work. Modems need analog lines and

will not work through a digital phone system. The Workshop will need at least one analog telephone line — a fax line will do nicely, if the telephone system is not analog. Some digital telephone systems have a connection on the side of the telephone for a data connection, and if available, this will be an analog line. I also found that most churches have an answering machine, and, after examination, found that in all cases there was an RJ11 socket at the back of the answering machine in which I could plug an extension telephone wire to connect to one of the computer modems. Thus by plugging one modem into the fax line, and the other modem into rear of an answering machine, one could have two available analog lines for the Workshop, even if the normal telephone system was digital. At least two separate fifty foot telephone wires equipped with RJ11 plug at each end are important pieces of equipment for each Workshop. The extension telephone wires allowed me to bring analog connections into the Workshop area. In several cases, I have had to run one hundred foot extensions — luckily the connections still worked.

Following the four Training Workshops, the Questionnaires were sorted, and information entered into a database.[43] Not everyone returned the Questionnaires, but there were enough to make an average of at least ten from each Workshop. The following is a summary of the information and comments.

Summary of Workshop Questionnaires Information and Comments:

Total attendance at Workshops - 51
Pre-Questionnaires returned (done at the beginning of the Workshop) - 47
Post Questionnaires returned (done at the end of the Workshop) - 34
Last Questionnaires returned (done eight weeks after Workshop) - 6

[43] I used MS Works for Windows. I find the database in Works easy to use, and readily available. Besides the price for MS Works is very reasonable. However, MS Works 4 for Windows 95 will not work with Windows NT 4. It crashes almost every ten minutes. In this case, it is better to use MS Access.

Attendees at the four Workshops:

Priests – 15 (12 male & 3 female)
Lay – 32 (15 male and 17 female)
Average Age of participants – 50.3 years
Experience (self ranked) - None – 3, Beginner – 13, Moderate – 27, Expert - 4
Own a personal Computer – 47
Operating System used – DOS – 1, Win3.1 – 22, Win95 – 17, WinNT4 – 2, Mac - 5
Had some previous experience with NWnet – 23
Had some previous experience with the Internet – 25
Had an Internet address – 26 (of which 5 quoted NWnet as their Internet Provider)

What are your personal Expectations from the Workshop?

- Learning to use email – 9
- Learning to use NWnet – 27
- Learning to use the Internet – 4
- Finding Diocesan Minutes - 2

How do you expect to use NWnet in the Future?

- access Diocesan Information – 20
- access Minutes – 2
- access Anglican News – 1
- talk with other parishes –4
- email to friends – 10
- saving the church money – 6
- receiving church literature –1
- discussing crucial issues – 3
- evangelism – 2

What was the most important Learning from the Workshop?

– accessing NWnet - 18
- accessing the internet - 3
- used a laptop for first time – 1
- how old my home system is – 1
- that I can do it! – 2
- advanced access to NWnet - 3

What was Most Helpful at the Workshop?

- clear presentation – 8
- hands on experience – 11
- most instruction in least time – 1
- answers to my questions – 3

What was Least Helpful at the Workshop?

- too introductory – 1
- the theory explanations – 3
- information about Macs – 1
- wanted more time – 2
- too many people at one time

Were your Expectations met at the Workshop?

- I feel more confident
- easier than I thought
- I received much more than expected – 5
- NWnet will do more than I thought
- you broadened my horizons today

How would you use NWnet for the Church?

- better contact between parishes and Synod Office - 5
- diocesan info - 6
- save money by not using so much paper – 4
- link people moving from one parish to the next
- cut costs by eliminating postage and postal delay - 3
- do committee work on line between meetings
- have "think tanks" in church issues, involving many people
- connecting people who live at a distance without driving costs & time

Commentary on the Questionnaire Results:

It was interesting to see that the average age of Workshop participants was slightly over fifty years. I expected a younger average age. The evidence suggests that those in the older age group are hoping to upgrade their lack of computer skills. The average age of the 15 priests in the group was 60.2 years. Since clergy in the Diocese of New Westminster have enforced retirement at age 65, this suggests that older priests are committed to learning computer skills that they can use immediately in their parish, and on into retirement. It also suggests that there a number of younger clergy who are not particularly interested in upgrading their skills in email communication.

The sex of the lay participants was split almost equally; that of the clergy was only slightly different than the Diocesan average, which is about 70 males to 30 females. Statistically, the results suggested that male priests are more concerned about upgrading

their computer skills compared with female priests, but the numbers are too small to make such a conclusion.

The participants ranked their own level of experience at using computers; about one third ranked themselves as beginners (including those with no experience), while two thirds ranked themselves as moderate or expert. About half of the participants had had some previous experience with NWnet or with the internet. Just over half actually stated that they had a personal internet address, though 5 of them quoted NWnet as their Internet Provider. All of them owned a personal computer, most of them having a PC. Only 5 participants owned a Macintosh, a number which is considerably higher than the Diocesan average. Though I did spend a few minutes speaking about the slight differences accessing NWnet using a Macintosh computer, one participant stated that she resented me spending this time, speaking to the needs of such a small group.

Most of the participants used either Windows 95 (17) or Windows 3.1 (22). The number using Windows 95 suggest that their computer had been purchased new (with the O/S installed) in the past year. Only one participant used DOS as their operating system of choice. I suspect that this person was still using an older model XT, and this was confirmed when she stated that one example of her learning from the Workshop was "how old my computer system is compared to everyone else". This means that, aside from the one DOS user, and the five Mac users, everyone else had a minimum of a 386 CPU in their computer. In fact, a number had Pentiums that were faster than my own. Not bad for a group of beginners!

The Pre-Questionnaires showed that most participants had come to learn about NWnet (36), though several wanted to upgrade their NWnet skills to help them use the system. Four participants wanted to use NWnet specifically for its free entry into the Internet email. The most important expectation that they had was to "access Diocesan Information" (23), though the second important expectation was to send email.

The number of participants who turned in the Post Questionnaire dropped considerably to only thirty four. Of these, the most important Learning was accessing NWnet or the internet (24). Several were excited that they "could do it". According to this group, the Most Helpful item from the Workshop was the "clear presentation" (7) and the "hands on experience" (11). Others stated that they were pleased to have had all their questions answered. One person (concerned with efficiency?) was pleased that so much information had been packed into the three short hours. The Least Helpful items were negligible: Only eight people responded at all to this category; one found it all too introductory, and three found the computer theory too difficult. Perhaps the learning from this is that most people felt the balance between teaching and hands on experience was about right, while the four negative responses balanced themselves. At least one person remarked that there were too many people for the number of computers available; this happened at the first Workshop when nineteen people attended. Workshop attendance was strictly kept to twelve or fewer participants after that, since the criticism was deemed quite valid.

Participants were enthusiastic as to the Meeting of their Expectations. Five persons stated that they had received "much more" than they expected; others felt "more confident", while others stated it was "easier than I thought".

Suggestions as to how NWnet could be used for the Church were varied. Ideas like improving Diocesan Information (6), connecting parishes together (5), saving paper and postage (7) were often quoted. However one person suggested that NWnet could be used to send information about parishioners moving from one parish to another. Another suggested people could use NWnet to do "committee work online between meetings". Another suggested the use of "think tanks online" to discuss and decide about issues that involved the Church and Diocese. Most were delighted at how people from many and distant parishes could be linked together easily, simply and inexpensively. All were enthusiastic about both the Workshops and the future of NWnet in the Diocese.

The Last Questionnaire:

A number of weeks after all the Training Workshops had been completed, a third Questionnaire (called the Last Questionnaire) was emailed to each participant. This Survey Instrument measured how well the participant was making use of NWnet, and what parts of NWnet were of most importance. Six people responded.

The following is a summary of learnings from the Last Questionnaire:

Summary of Learning from the Last Questionnaire

1) On the average, how many times per week do you use Nwnet? 22,14,12,3,5,1

2) How are you using NWnet --- check all that apply:

Diocesan Information – 5
Committee Minutes – 2
Free Internet Email access – 4
Chatting with others – 3
Downloading Files – 4
Messaging to others – 5
Reading Anglican News – 5
Reading Sermonshop – 2
Other - 3

3) How do you believe NWnet could serve you better?

needs more help online to access the data (this from the only person who accesses NWnet via DOS, without a First Class Client)
it's adequate
it allows me to surf the web, for free of course.
All is OK
by getting more Communications Committee members signed on. Encourage more users.

4) What do you like most about NWnet?

it's free (3)
easy to use (2)
it's a beginning, but not many online yet.
It's a great way to get in touch with clergy of the region.
I enjoyed the Workshop very much
Private network between Anglicans in the Diocese

5) What do you dislike most about NWnet?

logs me off when I haven't done anything online for two minutes
no problems so far
some Conferences haven't changed for months. Why is no one writing to them?

6) How do you believe Email can further the work of the Church?

communicates faster to people who are distant from the centre (2)
cost savings for communication with Diocese
this can make things go much smoother
instant communication between diocesan members. I'll use it more when more posted

The "Last Questionnaire" showed that many people are using NWnet at least every day. This accounts for the fact that over two hundred messages each day are being

sent and received, though the total user list is slightly less than one hundred and ninety persons. It also suggests that a large number of people check in to see what is available, but do not leave notes of messages. This accounts for the lack of new messages in most of the Conferences.

CHAPTER SIX

A SURVEY OF EMAIL SYSTEMS IN ANGLICAN/EPISCOPAL CHURCHES IN NORTH AMERICA

It is interesting to describe one specific communication system for the Church; this paper attempts to do that; but how does that one system fit into the whole? What is happening in the field of Diocesan computer communication in the rest of the Anglican-Episcopal Church in North America?

In an attempt to find out, I initiated a survey of all the Dioceses in North America, to discover how many other Dioceses had computer communication systems, and how they are functioning in the life of the Church.

In order to accomplish this survey, I prepared a Survey instrument [44] that was sent to one hundred and thirty Diocesan offices throughout North America on February 14th, 1997. The survey instrument was one page long, with mostly Yes or No answers, so that it could be done in a minimum amount of time.[45] It was accompanied by a letter addressed to the Bishop of the Diocese, which explained the Survey and its use. The letter also advised that I would send a copy of the results of the Survey to the Bishop if so

[44] See Appendix A

desired, so that each could be aware of what was happening across the North American Anglican/Episcopal Church. The letters and survey instruments were accompanied by a stamped self- addressed envelope. [46] I used MS Word for Windows 97 for the preparation of the Survey instrument and the Letter to the Bishops. This allowed me to use the Mail Merge program in Word 97, and to construct a database of Dioceses, complete with names, addresses, and phone numbers. Once initialized on the computer, the Mail Merge worked perfectly, printing both the Letters and the Mailing Labels. Finally I printed two hundred and sixty Labels of my return address, one set for the outside of the large mailing envelope, and one set for the address on the stamped return envelope. I used Avery Labels #5161 throughout.

I was convinced that I would need to do a telephone follow-up with many of the Diocesan offices a few weeks after I had sent the Survey instrument. I was not wrong. After sending out one hundred and thirty copies of the Survey, I received seventy-seven responses in the space of four weeks. Seven questionnaires were returned by Canada Post as undeliverable, and I had to phone these Dioceses personally. The actual return from Dioceses therefore amounted to a fifty nine percent return in the first four weeks. Since I had included a stamped self-addressed envelope with the survey questionnaire, I considered the response rather poor — until I was told that a response of five percent to a survey is considered usual.

---

[45] I measured how long it would take — the time was less than 2 minutes — hardly a time waster.

[46] Some of these envelopes had to have forty-five cent Canadian stamps, but the majority needed forty-six cent American stamps. I hoped by including pre-stamped return addressed envelopes in the package to the different Dioceses that I would obtain a reasonable rate of return.

Nevertheless, believing that any increase in the number of responses would be beneficial to the integrity of the survey, I telephoned fifty-one dioceses who had not returned the completed questionnaire, faxed them copies of the Questionnaire, and asked them to fax the completed survey instrument back to me. I received thirty-eight more responses, making a total of one hundred and fifteen. That gave me an eighty eight percent final response rate to the Survey.

The results of the Diocesan Survey were as follows:

RESULTS OF DIOCESAN EMAIL QUESTIONNAIRE

*A) **Does your Diocese possess or use a computerized Electronic Mail System** for Communication with parishes, priests, or anyone else?*

Yes – 39 reported on the returns. (But read commentary below.)
No - 76 reported on the returns.

This question seems to have created confusion as to what was meant by "possess or use a computerized Electronic Mail System for Communication with parishes, priests, or anyone else". A number of Dioceses interpreted this to mean sending any kind of email at all, including a simple connection by someone in the Diocesan office to the Internet. Of course, the questionnaire clearly asked if the Diocese possessed or used a "***computerized email system for Communication with parishes, priests, or anyone else***" together in a Diocesan system, and this is radically different from a simple Internet connection by a person sited at the Diocesan office. Because of the misunderstanding or misreading of the Survey question, the answers tended to be unreliable. I found it necessary to do some "educated interpretation of the answers". When the other answers on the Survey response showed that there was little or no attempt to connect parishes, priests and people of a Diocese together, and when the responses indicated that very few if any parishes were

receiving Diocesan information from a diocesan email system, I concluded that the Diocese did not have an email system that connected parishes priests or anyone else in any significant manner. Therefore, considering the Survey responses as a whole, it was opinion that the results would be better interpreted as follows:

Yes – 6 (39 had been reported on the returns).
No - 109 (76 had been reported on the returns)

In my opinion, the total of six Yes answers would take into account the three (or possibly four) dioceses which could be reasonably understood as attempting to use Ecunet as their Diocesan email system, since almost half of the parishes in these specific three dioceses were reported to have some connection to Ecunet. The figures of Yes – 6 and No – 109 above are my personal interpretation of the Survey responses based on a consideration of all the data on the respective responses, not just the answer to Question A.

The number of thirty-nine Dioceses reporting that they "possess or use a computerized Electronic Mail System used for communication with parishes, priests or anyone else" is, therefore, in my interpretation, a highly exaggerated figure. Very few Dioceses actually have a system set up and running, though a few are considering the issue. According to the returns, a total of thirty-four Dioceses have turned to Ecunet, and set up Meetings on Ecunet specifically for their Dioceses. However, since no Diocese has a requirement that all their parishes connect to Ecunet, and since every parish would have to pay monthly for this privilege, any Ecunet connection tends to be only for Diocesan Office personnel, plus a few parish priests. An exception to this are the Dioceses of Ottawa, Caledonia,[47] and

[47] The Bishop of Caledonia, the Right Rev'd John Hannen, stated to me that the use of Ecunet in his diocese was still not very effective, since only half of the parishes are connected to Ecunet. I assumed from this comment, that until

Milwaukee, all three of which are expecting their parishes to be connected via Ecunet, though only an average of about 50% of the parishes actually are connected.

Several Dioceses were hoping that Ecunet can provide them with Diocesan wide email connections, and, if they are prepared to pay the cost for every parish, this method would work and work well. One Diocese is experimenting with Quickmail, a MAC email system, and is contracting with a company to look after its parish and clergy mailing, though this proposal is only in the beginning stages. Several Dioceses are using Novell or CC:Mail or some system to connect their Diocesan computers on a LAN (local area network); but this has not been extended to parishes outside of the Diocesan office. The Diocese of Algoma is using Searchlight BBS software to run a Diocesan communication system, called Churchlight BBS, but it has not been widely used in the Diocese as yet. This is a shame — the Diocesan wide use of Searchlight BBS software could be an inexpensive way of connecting many priests and laypeople together in a simple BBS communication system. Only two Dioceses, New Westminster and British Columbia, report that they are using First Class Client/Server software to connect parishes, priests and lay people together, though neither Diocese has yet connected one hundred percent of their parishes into such a network. Only the Diocese of New Westminster has adopted their computer communication system as an official email system for the Diocese, though its use for diocesan wide communication is still in the beginning stages.

---

every parish was connected, Ecunet could not be used effectively as a diocesan information source for the whole of his diocese.

B) If the answer to the above is ☑Yes, please answer the following questions:

*1) **What software do you use** to run your communication system?*

First Class Client/Server - 2
Searchlight BBS - 1
Galacticomm Worldgroup - 0 (1 Diocese considering using Worldgroup)
Website - 1
Ecunet – 34 (23 regard Ecunet to be the foundation of a Diocesan system.)
AOL - 6
Quickmail - 1
CC:Mail - 1
Other - 7

Because of the confusion in answering question #1, question #2 was often answered incorrectly. I had expected the respondents to name the computer software that was used to run a Diocesan Email system that connected the parishes, priests, and people together; but instead I was given answers like America On Line, Ecunet, Navigator, Netscape, or even in one case, Microsoft Word. The above listing shows a fairly large use of Ecunet, but its use in any Diocese tends to be limited to a few parishes.

*2) What **type of computer** do you use as the Server for the Diocesan email system?*

PC - 105
MAC - 6
Other - 3
Unix - 1

I expected a larger number of responses to be for Mac systems, but discovered that PCs are almost universal in Diocesan offices. Most Diocesan offices have pentiums; some use 486s; two stated that they used 386s. I suspect, based on the other information stated on their returns, that those Dioceses who stated that they used "Other" were in fact using PCs. If this is true, then ninety five percent of Anglican/Episcopal Dioceses are using PCs.

*3) What **operating system** runs the Server?*

DOS - 7
Windows 3.1(95) - 95
MAC - 5
Windows NT - 5
Novell - 2
Unix - 1

I expected the returns on this Question to detail the Operating System that was used for the Communication software, but because of an understandable lack of knowledge of a diocesan wide email system, the question as to which OS would run the communication Server was misunderstood. Instead the general OS used in the Diocesan Office computers was stated. However, the responses still gave a picture of which software is being used, and/or would be available if a Diocese decided to install a computer communication system. Here again, Windows 95 dominated the scene. A number of Diocesan offices are still using Windows 3.1, but five had already upgraded beyond Windows 95 to Windows NT, almost the same number who use either Mac or DOS. It was interesting to learn that Windows 95 is close to being a universal operating system in Diocesan offices.

*4) Who **supervises** the communication system?*

Single person - 50
Committee - 9
Company - 17

No surprises here. The answers show a preponderance of "single person". This indicated that the "Communications Officer" or the Diocese tended to be the person expected to run the communication system. When "company" was indicated, in almost every case meant that the Diocese was using Ecunet as its communication system. The

discrepancy between the total of seventy-six responses and one hundred and fifteen returns reflects a number of unanswered questions in the returns from many Dioceses.

*5) What is the **approximate operating cost per year** for your Diocesan email system?*

Most of the time this was left blank. Those answered given ranged from $160.00 to $3000.00 per year. For the most part, the 32 Dioceses using Ecunet tended to count only the cost of the Diocesan office connection, say $240.00 per year (or about $20.00 per month)[48], and forgot to add in the cost borne by all their parishes.[49] For a Diocese of one hundred parishes, at $20.00 (Canadian dollars) per parish per month, the cost would come to about $24,000.00 per year --- a not inconsiderable sum. If one added to that the cost of including one hundred key lay people in the Diocesan system, one can see that the total cost of using Ecunet as a Diocesan email system could easily become $50,000 per year. If one added to that any cost for Internet connections for the Diocesan office, and for some parishes as well, the total actual cost per year of using Ecunet as a Diocesan Communication system could amount to a substantial amount, if **all** costs are to be considered. Most supporters of an Ecunet style Diocesan Communication system would expect each parish to pay its own share.

---

[48] An Ecunet connection is approximately $11.00 US per month, plus online time. I have estimated this at about $20.00 Canadian per month. However, for this amount, a user can actually have up to 3 inboxes — for example, the parish church, the priest, and a parish assistant — all charged to the one account. As well, the Convene software has a one time charge of approximately $50.00 US.

[49] The Diocese of Caledonia and the Diocese of Minnesota both estimated their annual costs for using Ecunet at a minimum of $2,000. However, this only covers the costs of approximately 8 to 10 individual accounts. If a Diocese expects every parish to be involved — and if it is to be a truly Diocesan communication system they all need to be — the Diocese should take into account the total cost of running the system, irrespective of who is paying the individual invoices.

It is easy to assume that the financial costs of a parish connection should be carried by each parish; it certainly would be a small part of a parish budget. However, an estimate of the real cost of operating a Diocesan system needs to include **all** the charges that each parish may reasonably be expected to assume, as well as other clergy and key lay personnel. When all this is added in, the annual cost of a Client/Server Diocesan BBS system, like First Class or Worldgroup, suddenly becomes very reasonable. The annual operating cost to the Diocese of New Westminster for NWnet is approximately $2000.00 — and all parishes and clergy and lay people may connect to it for free. The cost of the original equipment and software can certainly total $7000.00, but this is a one-time cost, and upgrades to First Class software are also free.[50] Add to this the annual operating cost of approximately $2000.00 for telephone connections and other charges, and the cost of creating a Diocesan BBS using any Client/Server software for a Diocese of 100 parishes becomes very small compared to an amount of $25,000.00 to $50,000.00 spent in total on annual Ecunet connections. The Diocese of Milwaukee was the only diocese to specifically state that the cost of using Ecunet would be $250.00 per year per parish.

Some Dioceses have a LAN connection in their head offices, complete with a connection to the Internet. This is certainly an excellent way to go. However, most modern BBS systems, like First Class, or Galacticomm's World Group, can provide the same connection to the Internet. In fact the latest offering from SoftArc provides a BBS type communication program that is part of the Internet, similar to a web-site, and

[50] The free upgrades to First Class software is one of the great selling points for SoftArc's First Class Client/Server system. It only takes a couple of annual upgrades before the choice of First Class begins to make a great deal of sense. Most other software manufacturers charge a substantial amount for annual upgrades.

allowing users to connect using any modern communication program, like Netscape or Eudora. A modern Client/Server BBS would allow all of the Diocesan offices computers to be networked together with a private office mail system on a LAN, would connect the Diocesan system to the Internet, and allow access by parishes to the same Client/Server system. The latest upgrade to SoftArc's First Class commercial BBS is a new offering that sites the BBS on the Internet, allowing Internet communication, a LAN connection for office staff, access through the Internet without a First Class Client, and a web site. A few Diocesan offices have chosen to use Novell, and at least one is using CC:Mail; these can also be effective. However First Class would provide a cheaper and simpler connection to do the same job, and connect to all the parishes, priests, and key lay people as well.

*6) Is the **Diocesan system used for**:*

a) Distribution of Diocesan information to parishes and/or clergy - 42
b) Committee Discussion between meetings - 23
c) Distribution of Minutes of Diocesan Committees - 15
d) Clergy (and/or lay) or parish discussion and intercommunication - 40
e) Private sharing of information amongst members of Diocesan groups - 44
f) Distribution of Anglican Worldwide News - 23
g) Sunday Lectionary discussion and ideas - 16
h) E-mail to other Diocesan officials only - 37

I had trouble making sense of the above information. Forty-two dioceses stated that they were using their email system, whatever it was, to distribute information to parishes and clergy, but in no case were even a substantial minority of the parishes in any Diocese actually connected to a single email system. Even when a Diocese stated that they were using Ecunet as their email system, they qualified this statement by stating that very few parishes actually were connected to Ecunet. Some Dioceses were encouraging their parishes to obtain an Ecunet connection, and some were actually trying to send some information out to parishes in this manner. But I could not find even one case in any

Diocese in North American where email distribution of Diocesan information was actually taking place to all parishes, though some were hoping to accomplish this in the future. Thus most of the information stated in "Question 6" above needs to be seen as a hope for the future, rather than what is actually taking place at the moment. The answer of "37" to (h) Email to other Diocesan officials only seems to be the most accurate response.

Even if actual distribution of Diocesan information is not taking place in very few Dioceses, surely the distribution of Minutes of Diocesan Committees, the distribution of Anglican Worldwide News and Sunday Lectionary ideas could be taking place without any great effort. Yet oddly enough these all rated low in the stated responses. If Dioceses were actually using any form of an email system that interconnected parishes, priests, and laity, the above categories in "Question 6" would be much higher. The desire to be informed, to share information, and to be involved, is very high amongst the clergy and laity in the Church; for a Diocese to facilitate this by creating a truly Diocesan email system would interest and find strong support amongst many educated people, both clerical and lay.

7) Does your Diocesan E-Mail system have a connection to the Internet?
Email address: 59 Dioceses provided email addresses
About half of all Dioceses responding reported that they had an Internet connection, and provided their email address. In some cases, the email address was for the Communication Officer, and not the Diocese. A few used Ecunet or AOL as their Internet connection, but the vast majority have contracted with an independent Internet Provider for connection. A number of Dioceses have their own domain name.

8) Would your Diocese be interested in knowing the results of this Survey, prior to its publication as part of the Doctoral Thesis "Computer Communication for the Church".

Yes - 94
No - 21

The answers to this question surprised me. I had expected that this would be universally answered with a YES. Why would a Diocese not want to know what was happening around them, so that they could make informed decisions themselves? — but as can be seen from the answers above, twenty one Dioceses stated that they didn't even care to know what was happening in other dioceses. As well, I would reasonably infer that those who neither answered the first letter, nor responded to the phone call and the fax, did not care to know what was happening in the Church in regard to diocese to parish email communication. In an age that is rapidly becoming known as the "Information Age", it is hard to understand such an attitude. But obviously "different strokes for different folks" applies to dioceses as well.

Results of the Survey were tabulated on March 31 1997, and based on a final total of one hundred and fifteen returns from a total of 130 mailed surveys.

From the Survey I learned the following:

1) The Dioceses of New Westminster (geographically the Lower Mainland of British Columbia) and the Diocese of British Columbia (geographically Vancouver Island) were both using First Class Client/Server software to run a Diocesan BBS for clergy and laity. The Diocese of New Westminster has officially adopted its communication system, called NWnet, and is promoting it for widespread use. The Diocese of British Columbia

has not yet formally recognised the pioneering work done by Mr. Michael Harrison in establishing and running the Diocesan BBS, called ACTS-Victoria. The Diocese of BC however has decided to fund ACTS, in a limited way, and may consider the possibility of adopting it in the future.

2) Thirty dioceses in the Episcopal Church, and four in the Anglican Church of Canada, stated that they were using Quest, an Anglican version of Ecunet, to keep in touch with their parishes. Some of these dioceses had established a number of Diocesan Meetings [51] on Ecunet, and had recommended to parishes that each subscribe to Ecunet, keeping up to date by reading and responding to these specific Diocesan Meetings. There are a number of advantages to this method:

a) The email system needs no diocesan person or committee to run it, since it is run by the Ecunet system in the United States.

b) Parishes and others who subscribe to Ecunet have the advantage of connecting to many other Meetings[52], not necessarily Anglican, allowing an ecumenical approach.

c) The diocese need take no responsibility for the email system, since Ecunet takes all the responsibility of running the system.

d) There is a very real possibility that Ecunet will have changed its operating software by early 1998 by purchasing a contemporary Client/Server communication system. If this happens, it is very likely that Ecunet will be able to gateway with other

[51] On Ecunet, Meetings are the same as Conferences on First Class.

[52] A minimum of 600.

Diocesan email systems, meaning that Ecunet will be the hub for a potentially worldwide ecumenical email system. Such a proposal, if actually effected, would interconnect many Diocesan systems allowing the best of both worlds — local Diocesan conferencing and information dissemination, and worldwide ecumenical connection, all on the same system. This is still in the development stage, and neither agreement to build such a system, nor costs of connection have been established. It does have wonderful possibilities for the future of religious and ecumenical electronic connections.

There are also several disadvantages:

a) Each parish must subscribe and pay monthly to Ecunet about $11 US plus online time, (about $20. Canadian) to maintain its connection with the diocesan Meetings.[53] This cost may be small for each parish, though some may balk at paying year after year for this system, but it virtually excludes the laity[54]. How many of the laity in each diocese will want to invest $240.00 (Can.) per year just to read the Diocesan information online? Additionally, the cost of the software[55] to run Ecunet for each subscriber is about $75.00 (US), though this is a one time charge. Since the dioceses who use Ecunet expect their parishes to pay the monthly costs, the diocese has very little extra to pay, except the accounts of its own personnel. The above costs could be reduced if the Diocese can contract with Ecunet to pay the full amount for their own Diocese; and there is some

---

[53] The estimated average $15.00 US includes the $11.00 monthly fee, plus online time. I have estimated that a Canadian dollar is approximately worth 75 cents to the US dollar — thus the $20.00 Canadian.

[54] Ecunet allows up to three persons to use one account. Thus a priest, a church secretary, and another person (lay or clerical) could be using the same account, though each having their own ID. This is would mean that one of the three would be billed monthly for the account and online usage of all three.

[55] Convene 4.0 - for Windows or DOS

evidence that Ecunet allows "bulk rates", if the Diocesan Office pays the single account that would cover the whole of the diocese. This would certainly reduce the cost of using Ecunet, provided that the Diocese is prepared to pay the total Diocesan cost for every parish's connection to Ecunet. There is little suggestion that such is the case.

b) The diocesan system is dependent on an external company, Ecunet, to maintain the links with its own parishes and priests. Ecunet operates, at the moment, courtesy of the Presbyterian Church of the USA. A diocese thus has no control over the future or even the continuing existence of the company that operates its diocesan email system. This might change if the latest proposal for Ecunet to move to a contemporary Client/Server software becomes actualized.

c) Ecunet is primarily text based, rather than graphical, making it more difficult for inexperienced persons to learn or use, though Convene for Windows does help in this area. The latest Convene for Windows, version two, allows more graphical interchange, and allows access through the internet as well as modem. It is in beta version at the moment. If the proposal to move Ecunet to a new Client/Server system becomes reality, the above objection will become irrelevant.

3) In Canada, the Diocese of Ottawa makes use of an arrangement with Ecunet in order to establish a possible connection with each parish. However, for financial reasons, many parishes and clergy have not connected, and the average lay person is not included in this scheme unless he or she can afford the monthly charges. Such a practice leaves most of the laity without email access to their Diocesan system, unless the diocese includes them in the bulk payment.

4) The Diocese of Caledonia (in northern British Columbia) originally had run a simple BBS[56] to connect its parishes and clergy; however it abandoned this for its present connection with Ecunet. Each parish is expected to subscribe, and to pay its own costs. As might be expected, about half do, and half do not, meaning, as the Bishop remarked, the email system cannot be universal.

5) The Diocese of Algoma runs an interesting BBS called "Churchlight BBS". It is operated by the Communications Officer, the Rev'd Guy Snell, using a shareware BBS[57] program called "Search Light BBS". Churchlight BBS is connected to the fidonet system, the largest hobby BBS network, allowing a free connection to the Anglinet BBS system that I personally established a number of years ago. Using this simple and very economical BBS system, the Diocese of Algoma offers connections for clergy and laity for the distribution of Diocesan Information, worldwide Anglican News, and Sunday Lectionary ideas to all parishes, as well as allowing private messaging amongst clergy. The cost is minimal, though users must pay the long distance charges. By the use of offline readers, this cost can be kept to a minimum. However, the Communications Officer stated on the returned Survey that Churchlight BBS is "poorly utilized by the clergy (whom) it could be serving".

6) The Anglican Church in South Africa has been running a similar shareware BBS to connect parishes and diocesan offices, but this system was closed down in the spring of 1997 when the person running the system left, and no one else volunteered to

[56] Established by the Ven. Ian Mackenzie, Archdeacon of Caledonia.

[57] Bulletin Board System

keep it running. There is some interest in connecting the Diocese of Panama into Quest, using First Class software. The Diocese of Uruguay is searching for funding to set up a First Class system that would connect nightly to NWnet, and thereby to the Quest network. If this is completed soon, it will be the first actual operating system in any Diocese in South America using First Class software. Finally, a diocese in Australia has been experimenting with a connection to a Diocese in Chili, South America, again using Quest and First Class software.

On the Diocesan questionnaire, I stated that I could send to a diocese, free of charge, a summary of the results of the Survey. I mentioned this, assuming that many Dioceses would like to know what was going on in the field of computer communication in other Dioceses. My assumption was that "we can all learn from each other". Most of the Dioceses responded that they would be pleased to see the results of the Survey; some even took the time to write notes saying how interested they were in what others were doing in this field, because they were considering a communication system of their own. However twenty-one Dioceses stated that they did not even care to know the results of the Survey! That is — eighteen percent of those who responded were not interested in knowing what others were doing.[58] It should be noted, however, that each of these Dioceses did take the time and care to return the questionnaire; fifteen dioceses did not respond to the Survey in any manner.

---

[58] The following Dioceses indicated that they did not wish to know the results of the Survey:

Edmonton, Keewatin, Kootenay, Saskatchewan, California, Central Florida, Colorado, Dallas, Delaware, Louisiana, Montana, Olympia, South East Florida, Southwestern Virginia, Vermont, West Tennessee, Western New York, Western Kansas, New Jersey, Athabasca, Washington.

To all those Dioceses, one hundred and fifteen of them, who took the time to fill out the Survey instrument, and to return it to me by either mail or fax, I want to express my thanks and my appreciation. Each has assisted me in this project; I do hope that the information received by them in the mailing of the results will be helpful in their own Diocesan planning.

CHAPTER SEVEN

CONCLUSIONS

The Democratization of Communication

Communication involves verbal or nonverbal interaction between two or more persons. At its basic level, communication means the transmission of information, requests, commands, or feelings from one to the other, in such a way that the receiver is effected by the receipt of the data. Communication can involve verbal information, written information, nonverbal signs, art, music, and many more forms; but all transfer or intend to transfer information from one to another. Communication thus relies on some form of intermediary --- colours on paper, shapes drawn in the environment, sound waves through air or some other medium, electronic impulses through conductors, or, as in sexual communication, the caress of a finger or touch of the lips.

Computer communication uses digital signals called bits to transfer information from one to another. Such digital signals must be encoded into bits or bytes by one person, through a keyboard, mouse, and computer screen, and then decoded at the other end by another person. However, the bits and bytes look nothing like the information itself. The bits are essentially commands to turn switches on or off. The bits are not the information

being communicated, but commands to enable another computer to mimic the information that created the bits in the first place. These bits can be sent at virtually the speed of light to a computer next door, around the world, or out into space. But unlike print, they do not convey information --- but only commands to turn switches on or off in a distant computer.

The advantage of computer communication is that computers can send bits from one to another at blinding speed, with technical ease, and fastidious correctness, such that a message sent at this minute from one computer can be read in seconds at hundreds or thousands of computers, either next door or equally with ease on the other side of the world. These bits can power either a computer monitor so that the message appears in print on a screen, or a fax machine so that the message appears on paper, or be compacted in a file on a hard disk to await the computer operator's command. No paper, no delay, virtually no error, and at little cost.

In a sense, we communicate in a similar manner. We speak in sounds, sounds that to the uneducated are simply a refined form of grunts, sighs, or musical notes, but we have learned that certain sounds have certain meanings that we call language; and those sounds are designed to convey ideas from one person to another. The sounds are completely different from the idea, in fact, often are quite dissimilar. The word "locomotive" does not convey the immense size, weight, colour, or noise of a locomotive; nor does the number "747" look at all like a Boeing 747 airplane in reality. Yet the

mention of these sounds instantly conveys the meaning to a person who understands the language and has had some experience of either a locomotive or a Boeing 747.

In the computer field, bits are commands sent from one machine to another to turn switches on or off in such a manner that the distant computer will mimic the original computer, or place upon its monitor screen representations of colour, form, or letters that will convey meaning to us. In no way does the computer "understand" the meaning of those screen representations --- instead the computer understands only the commands that are sent to it, either from a keyboard, a mouse, or a modem.

If the computer cannot "understand" the "meaning" of the representations on the screen, it cannot "understand" the messages that are sent as communication between one computer and another. The bits that contain commands for the writing of a love poem are just as real in "meaning" as those bits that contain directions for the making of a terrorist bomb. The computer assigns no value to either message. It only determines the "correctness" or "incorrectness" of the bits, according to whether it is able to obey or not obey the commands that the bits contain. Thus computer communication is not involved with the orthodox or the heretical views of the sender or receiver. The message may be absolute truth or absurd nonsense --- and the computer faithfully reproduces it according to the commands in the bits transmitted.

This has some implications for computer communication for the Church. In the past, the Church was able to exercise some authority over the transmission of information via its own press, its own publications, and its own teachings. Press officers were hired to

be sure that the Church could be sure that its own specific spin could be placed on information. Books could be approved, documents could be authorized, and Pastoral Letters vetted to be sure that only the orthodox truth was transmitted. People expected the Church to speak with One Voice --- and voices other than that One Voice would be viewed with either suspicion or expectations of heresy. Creeds, Confessions, Declarations of Faith to be signed, were the result of this One Voice communicating to the world. When one disagreed with the One Voice, one broke away from the establishment and founded ones own church, which in turn established its own "orthodoxy". These voices competed with each other as the One Voice, that which spoke for reality, and communicated correctly the truth.

But the ease and universality of computer communication has changed all that. No longer does one establishment control the medium of communication, as a corporation can control television, press and radio under one roof. With the particularity of computer communication, and the universality of the internet, anyone with a computer and a web site can broadcast to the world his or her own perception of reality on an equal footing with the Church or any other religious group. Instead of one voice, there could be 3 billion voices, each broadcasting their own particular vision, each competing with the other for those who would read or listen. The reality of communication is chaos.

We cannot go back. Nor is going forward, progress. The day of orthodoxy has vanished as a dream. There is no heresy, only competing ideas. [59]The Church is filled with competing ideologies, all wanting to communicate, all pressing their point of view, all proclaiming their own orthodoxy. Pluralism within the Church has become a reality.
I see only two choices at the moment: the Church can resolve debates by publishing one code of reality, exclude all who disagree, and bar the gates against the infidel. There will be fundamentalists who find this the most comfortable idea, and who will thus seek to control all information and all resources under its control. Those who seek to know only the "right" answers, and to follow the "right" practices, will rush to join this Church. In its simplicity and its solidity, it will indeed be comforting and strong. But these advantages are ephemeral. Different nuances of truth will arise, progress in understanding will happen, ideas from the rest of the world will impinge, even the Holy Spirit will speak[60], and the Church of Permanence will either have to flex, or crack. Only God is unmoveable, precisely because God is already there.

The other answer is dangerous and uncomfortable. It involves the Church holding high the Cross of Christ, yet allowing a multitude of voices to speak of the wonders of that Cross. The Church is having enough problems existing in a world of pluralism, without contemplating the pluralism in the Church. The desire to "purify", to "separate", to "reform", will be enormous. Can the Church exist with a myriad of voices clamouring within it to be heard, without fragmenting?

---

[59] I am indebted in the following paragraphs to ideas stemming from a speech by the Rev'd Dr. David Lochhead at the Ecunet Conference in Baltimore, May 1995.

[60] I certainly hope so!

Computer communication will not lessen the problem, but instead will augment it. Computer communication gives every person a pulpit, every person a voice --- and what is more terrifying, a voice that speaks equally with the establishment. No longer can the establishment proclaim, and expect all to listen --- instead computer communication allows everyone to speak, to discuss, to dialogue with one another, to expose, to challenge, to object --- and to do it all publicly. The young, the old, the priest, the sinner, the strong, the faint, the faithful, the ignorant, the normal, the gay, the Bishop, the fundamentalist, everyone will have equal access to communicate, and all can speak to all. Can the Church continue to proclaim "the Faith once delivered to the Saints" in the midst of a plurality of voices, many of which are its own?

Computer communication will blur the divisions between establishment and powerless. It will place the words of the Bishop on the same level as those of a teen, the words of a theologian with the speech of an ACW president, the meditation of a saint with the graffiti of a sinner --- and all will have equal power to communicate. Will we measure "value" by the number of "hits" on a web page? How will we decide what is of the "Faith" and what is babel?

And yet, with the chaos comes an opportunity — computer communication brings the act of theologizing to the computer screen in front of us. [61] All can be involved,

[61] I am indebted for this idea to a speech may at the Ecunet Conference in Baltimore, May 1995, but the Rev'd Dr. David Lochhead. The wisdom is his; the speculations mine.

all can know, all can struggle to make sense of the faith in our world. The distinction between theologian and people will be blurred. All will become students, all will have access to all the data there is, though none will know it all. All can share their struggles to live out the faith each day. All can read of others struggles. Party divisions melt away, as all will have access to the ideas of all. Understanding can grow as Christians share with others their growth, their failures, and their thoughts.

Computer communication places a world of information into the hands of the faithful ---and with that information, gives them a chance to be involved in the sifting, the understanding, and, yes, even the mistakes of using computers in doing theology. Because computer communication can transmit messages at virtually the speed of light, it will destroy differences in time and space, but it will not guarantee correctness. Christians around the world will share with others, as if they were next door, but what they share may be wonderful or worthless. What effect this will have on our different cultural values is yet to be known. The point is that whether we like it or not we are about to find out.

The Communication of Information

From the beginning of time, religious bodies have been at the forefront of information technology. The knowledge and practices of the ancient Egyptians were written in hieroglyphics — that is, priest writings. In every nation of the world, the religious elite invented and controlled the information technology. In many places, a ruler could not read or write — his job was to fight and to govern — and clergy of various

sorts were hired and entrusted with the task of writing, recording, and communicating information vital to the nation.

The ancient Hebrews communicated their history, and theology aurally, by passing on stories and poetry around the campfire. It was the priestly scribes that later wrote down these stories and claimed sole control of their content. Those who controlled the "books" controlled the information. The religious establishment occupied an important place in the life of the nation, not just because of the liturgy, but because they controlled the access to information.

In the first century, Jesus stepped beyond the bounds of practice of His day by taking the Good News to the poor and the agricultural worker. He did this, not by building new synagogues in their midst, but by going out to the hillsides, the farms, the beaches, even the stern of fishing boats, and preaching and teaching the Good News. The early Church continued this direction of innovation by writing letters to far-flung congregations, and having them delivered by Deacons, who both taught and applied what had been written. Though today, we might not imagine such an action as pioneering, yet in terms of the early Church, it was certainly an innovative way of using the information technology of that age. In other words, the Church continued the leadership in the field of information and communication technology that earlier religious establishments had done.

As the Roman Empire collapsed, and society moved towards a dark age, it was the monastic movement in the Church that not only preserved learning, but developed

libraries, schools, and scriptoriums. Hundreds of thousands of books were copied by hand, some beautifully decorated, in order that information and knowledge might be stored, processed, and passed on to others, and to future generations. The monastic schools, originally for the education of novices, were the foundations of our Universities. The great monastic libraries of the middle ages have become in our day reference libraries, open to all. Through it all, information storage and communication of data was controlled and accessed by the religious establishments of the day. Without them, the vast storehouses of knowledge would have been lost forever.

The invention of printing with moveable type changed the manufacturer of books almost overnight. Compared to the hand copying of books, now literature could be cheaply and rapidly printed, making it easier for all to learn. Here again, the Church was in the forefront of the new information technology. The Bible was the first book printed that received wide circulation. For the next hundred years, printing presses were used almost exclusively by the Church. Bibles, Prayer Books, religious documents, hymn sheets, all were needed for widespread distribution in a Church that was going through the turmoil and change brought about by the Protestant Reformation. Indeed, it is possible to postulate that the Reformation would not have happened the way it did without the printing press.[62] It was the Church therefore that was again at the centre of innovation in communication technology. Dr. David Lochhead has suggested that the printing press enabled Protestant denominations to change the concept of "Word" from the "Good News

[62] I am indebted for this observation and the ideas in this section to the work of the Rev'd Dr. David Lochhead.

spoken in community", to the "Good News printed in a book"[63]. If this is correct, then could one not say that the "information technology" being used has changed the very nature of the "information" being communicated? Has the medium changed the message?

In the nineteenth century, the Church began the "Sunday School Movement" for the education of English working children — children who could only attend school on Sunday, when the factories were closed. When laws were finally passed restricting the employment of children, Sunday Schools were expanded to include weekdays, enlarging the amount of education possible for these children, and creating the public day school for the education of all children. It was the Church that pioneered in this effort, creating a school system for everyone, and enabling the "communication of information" to many millions of people. Though governments have today removed schools from the purview of the Church, it was the Church that was in the forefront of this enlightened "communication technology".

But what of the twentieth century? For the first time, the Church seems to have fallen behind in "communication technology". Radio, movies, and television have been developed without the Church, and often, in spite of the Church. The Church has remained strong in the distribution of printed matter — one could truly say that the Bible (or portions of it) has been distributed to every corner of the world, in almost every language of the world. The printing of religious books goes on in every country of the world, but

[63] Shared with me by the Rev'd Dr. David Lochhead in a private conversation in a restaurant in Dayton, Ohio.

the Church, with some singular exceptions[64], has made little use of "communication technology" in this century. The development of computer communication has happened without the Church being effected. Governments, business, schools have all made efficient use of digital communication technology, while the Church continues to rely on the postal service or the fax machine.

A Dream of Diocesan Communication:

The Church does not have to be left behind in the field of Computer Communication. In fact, the church can learn from the mistakes and the successes of the business, educational, and governmental agencies that are already using digital communication systems to connect vast numbers of people. Computer Communication can interconnect priests, parishes, and people like nothing has ever done before. Space and time can be ignored; rural clergy, and lay people need be isolated no more. Information can be sent to them, virtually for free, instantly, and equally with the best informed priest or committee member. Better yet, all recipients can share information, dialogue together, and even debate and vote on issues, all online. The possibilities for digital communication to both unite and inform every member equally is exciting for the church.

NWnet was designed to do just exactly that. It was designed to show just how well digital communication can serve the church. It was setup to show how easily and

[64] I would count Ecunet as the most obvious exception.

simply the church can use the advantages of computer communication for the benefit of all members of the church. And in many ways, it achieved its purpose.

The project of designing, implementing, and completing a diocesan email system using First Class Client/Server software was a success. NWnet is operational in the Diocese, and is now being used by over 180 persons, over 40 of them being diocesan clergy. It has mirrored the diocesan committee structures, and provided a way for committee members to interact between meetings and to receive input from other members of the diocese. It has created a free inter-diocesan mail system, and even provided free internet email for all its users. It has connected members of the Diocese with other users on other diocesan email systems in other areas of Canada. It has provided a channel for the distribution of information from the Synod Office, both privately to Clergy and generally to all members of the diocese. It has provided a means by which all members of the diocese can share concerns, ideas, prayers, questions, and information, without regard to sex, age, status, race, or function within the church. It has provided free Training Workshops for interested people in the diocese. It has become a well known vehicle of communication within the diocese. And it has done all of this virtually for free, with little ongoing need for administration and little expense, other than the original installation. The NWnet Project has in these ways been a success.

However, it has not been an unqualified success. An honest evaluation needs to include the following observations.

1) Out of the 15,000 members of the Diocese of New Westminster, only 180 or so are registered users on the diocesan First Class system. These users have been faithful. They often leave messages of thanks on the system for the regular improvements --- even thanks just for its existence. Over 200 messages per day either originate on the system, or are delivered to it from outside sources, primarily in the area of private internet mail. The number of registered users is relatively accurate, since, unless a user accesses the system regularly, his/her registration is automatically deleted by the First Class system after a certain number of days.

2) Out of approximately 105 diocesan clergy[65], only 40 are actually users of the system, although the Diocesan Survey of Computer Usage showed that 80 clergy have personal computers.

3) It is significant that only one of the five Archdeacons, and only two of the ten Regional Deans, are registered as users of NWnet, though some of the others are known to use the Internet. Is it reasonable to draw the conclusion that those clergy most connected to the power sources of the Diocese are quietly remaining aloof from the diocesan computer communication system?

4) Though the Diocese takes seriously the resources of its many Standing Committees and Units, yet not one of them has begun to use NWnet for communication purposes, not even for the publication of Minutes.[66]

5) Even the Diocesan Staff has not used NWnet for any significant purpose since the diocesan system became an official communication system of the Diocese on February

---

[65] I am only counting active clergy, not retired clergy or non-stipendiary priests or deacons.

[66] Diocesan Council Minutes and Diocesan Synod Minutes are certainly displayed on NWnet --- but only because the Clerical Secretary of the Diocese and the Administrator of NWnet are the same person.

14th 1997. [67] This is a concern for me since a computer communication system is ideal for the distribution of diocesan information to parishes, priests, and people, easily, quickly, and for free, and yet is useless if not used. NWnet is not being used by the very people who would benefit most.

There is little doubt that I had hoped that NWnet would make a significant contribution to communication and sharing within the diocese. I had expected that the diocese would quickly grasp the efficiency, economy, and benefits from a simple modern email communication system for the fast distribution of information, either generally to all or specifically to clergy. I had hoped that clergy and laity would discover a wonderful way of sharing, communicating, and learning from each other. I had hoped that a diocesan communication system would have brought diocesan information to both laity and clergy in such a way that theologizing together over diocesan concerns would become commonplace and inviting. I had hoped that equal access to the diocesan information sources would have made for a better educated laity.

One of the reasons given for the former reticence of diocesan staff to use NWnet was the fact that it was owned and administered by a private individual. That reason changed, however, when NWnet was adopted by the Diocese as its own. Still, nothing much has happened so far. It is this lack of use by diocesan officials that I believe most delays the general acceptance of computer communication by the diocesan community. Until Diocesan staff begin to distribute diocesan information regularly and easily through

[67] As of June 20, 1997

its Conferences, until Diocesan Committees begin to use their Specific Conferences for Minutes and between meeting dialogue, until Clergy begin to share online their ideas, their concerns and hopes for the improvement of the Church as a whole, a Computer Communication system for the Diocese will remain as an undiscovered resource of easy, fast, simple, egalitarian, and free communication for all.

Communication: Why has the Church dropped the ball?

For the first time in human history, religious bodies are no longer at the forefront of communication technology. Computer communication technology is sadly lacking in the arsenal of the Church, and, with some rare exceptions, there is no great interest in the Church regaining its leadership in information technology. Why has this happened?

From the result of my study, I believe several answers are becoming apparent.

A) I believe the first answer could well be the apparent high **cost** of computer technology. Though it is true that computers cost less today than only five years ago, and that the abilities of a Pentium equipped computer greatly exceeds the XT of yesterday, yet the average parish still needs to spend almost $3000.00, as a one time cost, for the hardware and software[68] just to enter the digital information age. As computer needs rise

[68] About $1600 for the computer, $200 for the modem, $400 for the printer, and $800 for software like MS Windows95, and Office Pro 97.

in a parish, there will be a somewhat smaller ongoing annual cost for upgrading computer software, without considering the acquisition of more hardware. If one assumes a diocese of 100 parishes, the total cost can easily exceed $300,000.00 for a diocese. True, a diocese leaves it to the individual parish to decide on the type and financing of their own equipment and software, but that may be exactly where the second problem has occurred.

Parishes are governed by Parish Councils, elected by the congregation each year to make decisions on the mission and direction of the parish. The persons often elected are those whose great desire is to save funds, and preserve mission. Very few of them are the same persons who are making computer decisions in business firms. Very few of them have caught a vision of the Church's role in the Information Age. The decisions on the purchase of equipment and software are being made by persons whose desire it is to save money, not improve the ability of the Church to communicate. Does "if printed paper and the postal service were good enough for granddad, it is good enough for me" symbolize the thought of many of them? To suggest that the Church should be a leader in information technology, and that each parish should be paying for this leadership is antithetical to the thinking of most parish councils.

B) I would postulate that a second answer may well be a "**lack of strategic leadership**" from Diocesan Offices and Diocesan Committees. The strategic thinking that has been a foundation of the progressive responses from business, education and government in the field of computers has been sadly neglected in the upper ranks of the Church. The leadership for this strategic thinking should have come from the head offices;

just as the leadership in business and education has come, not from the branch plants, but from those in leadership who engage in strategic thinking? Companies have computerized in order to compete effectively with other companies. Schools have computerized in order to communicate quickly and effectively with others in the field of higher education, and to provide vast resource materials for students and faculty. Governments have computerized in order to deal with rapidly expanding population and civic needs. In business, education, and government, computer communication systems have been installed by a leadership who desired the best in strategic advancement. Such has not happened in the Church.

Instead, leadership in diocesan offices has chosen to respond democratically to the spoken needs of parishes — parishes which rarely know that computer communication even exists or how it could help them — rather than developing strategies to integrate up-to-date information technology into the future life of the Church. While business and education have both sought better, faster, and cheaper ways of communicating amongst their personnel, the Church has relied on doing things as "they have always done before" — complete with the inevitably slower and more expensive methodologies. We will soon be suffering the costly consequences.

In my opinion, as a result of the surveys and study, I am convinced that the lack of Strategic Leadership has been caused by a series of four factors.

1) The first is a "**lack of vision**" of the possibilities of computer communication.

Diocesan leadership has been so focused on survival in the midst of rapid change, that

it has not seen computer technology as an opportunity to find a better way of communicating within the Church. I believe it is time for the leadership of the church to enlarge its vision to see the advantage of a greater use of computers within the church, including the democratization of information possible with the introduction and use of Client/Server communication systems in each diocese that interconnect priests, parishes and people. In an age when businesses are experimenting with linking employees, working from home offices, into a company owned computer communication network, the Church, with its system of parishes spread throughout a diocese, should see that it already possess this "home office" situation, and is already in an ideal position to integrate a team approach to computer communication in its own work place. All it takes is a determined vision from the leadership. The rest of the church will respond as it sees the vision brought to life.

2) A second reason, I believe, is the pervasive effect of what could be called **"broadcast mentality"**. Diocesan leadership, whether in head offices or in committee structures, sees communication as a one way street --- the sending of information "from us to them" in the most convenient manner possible. The Post Office continues to manage that very well for the church — easily sending vast amounts of paper information from head office to the branch offices — expensively and slowly. Some diocesan officials have suggested the use of fax machines, which would cost the diocese less[69], eliminate the lengthy postal delay, but continue the "sending of paper material from us to them" mentality. In this age of the democratization of communication, I believe that two-way

communication must be developed that replaces "hierarchical thinking" with "team thinking". The implementation of diocesan computer communication would go a long way to change the "broadcast mentality" to "cooperative consultative team thinking".

3) A third answer is a "**nervousness towards technology**". From the results of the surveys, it became apparent that many groups in the church were nervous about the technology involved in computer communication. There have been a significant number of stories in the press about hackers, pornography on the Internet, and viruses spread from system to system. There is no doubt that hackers exist, but defenses against all but the very best are simple and easy. The very best hackers prefer to "hack their way" into banks, commercial telephone systems, government offices, and military agencies — and wouldn't waste their time worrying about a simple Diocesan communication system. Pornography does exist on the Internet, though only in a tiny amount compared to the vast amount of information placed there [70]; however, the use of an Intranet or a separate diocesan Client/Server system means that all users must register to be admitted. This registration is a simple but sure defense against the purveyors of pornography. The kind of individuals who might want to insert pornography into a church system would definitely not want to register on a Diocesan email system with their name, address, and phone number. Besides, the use of Moderators for Conferences, who understand and follow the Diocesan Guidelines, would mean that anything abusive, or worse, would be immediately deleted, and the

---

[69] It costs less only because it transfers the cost of paper and machinery to the parish!

[70] There is relatively more pornography in a corner store than on the Internet.

user warned, or removed from the system permanently. Diocesan Client/Server systems, unlike the Internet, are closed systems, and are extremely unlikely to suffer from pornographic or abusive intrusions. Viruses however are certainly possible. Viruses cannot be sent in a message or note written to a Client/Server email system, but are instead programs that hide inside other programs. So, though no virus could be found in a message in a Conference, a virus could be introduced into a file posted to a File Library. However, a good Virus Checker running automatically on the Server computer will detect and delete them quickly. Diocesan Office computers are far more likely to catch a virus from a diskette brought from home by a diocesan employee than from a modern Client/Server communication system.

4) The fourth answer in my opinion is the "**loss of control**" likely to happen with the introduction of a computer communication system. When NWnet was first adopted as the official email system of the Diocese of New Westminster, the first response from one of the Diocesan staff was to suggest that every Conference be made Read Only, to prevent users from posting any messages at all to anything other than Anglican Chat and their personal Mailbox. Diocesan staff instantly sensed that they would lose control of the sources of information unless they could control each and every Conference, and decide what could be posted and when. By their very nature, Client/Server communication systems are two-way — they encourage dialogue, discussions, a sharing of many ideas, and the egalitarian approach to information. Such a system spells danger to an authoritarian, hierarchical organization that wants to protect its ownership of the information to be shared. Some church officials are

nervous about losing control of sources of information. Is this not indicative of a lack of trust for the users of the system? What if someone should post something with which a staff member does not agree? Such fear must be taken seriously, and faced objectively. To offset it, Guidelines for the use of NWnet were posted, in a Read Only Conference, entitled *Please Read*, so that all users would know that their use of the diocesan system had limitations. Several other Conferences were made Read Only, so that Diocesan leaders could post information to them, without fear of response. In spite of these actions, the fact is that diocesan leaders have not posted one item of information to NWnet since the day it was adopted as the official system of the Diocese[71]. Fear of the loss of control by diocesan leaders is very real.

> ".... Moving to a system of distributed information publishing is hard. It requires a new way of thinking — breaking old habits and forming new ones. And it means giving up some control at the top. ..."[72]

I believe there is a place in the Church to develop leadership in computer communication at both the parish level and the Diocesan level. At the parish level, local leadership should be finding better ways to meet the needs of the community, to develop outreach, to do mission, to care for the sick and the poor and the unemployed, to heal the sick, clothe the naked, and challenge the ungodly institutions of our society. At the Diocesan level, leadership should be finding better ways to network, to share, and to communicate, in the fastest and most economical manner. To argue, as some are still doing, that local parish secretaries "can't manage anything more complicated than opening

---

[71] At the time of writing, this state of affairs has lasted for over four months. The only answer given when asked why NWnet is not being used by the diocesan office is, "The issue is under discussion."

[72] Elgan, Mike, page 48, Windows Magazine, June issue, 1996

mail"[73] is to invite failure. Diocesan leadership should be envisioning the best and most economical methods for the Church, strategizing for the future, and making such methodology easily available for the Church.

In my opinion, the Presbyterian Church USA has shown such leadership in communication strategy, for their particular branch of the church, by adopting Ecunet as their nationwide communication system. In this way, they have guaranteed an email system, second to none, that is available for every one of their congregations, their ministers, and a number of their laity. My former criticism of Ecunet not withstanding, it is an excellent system that meets many of the needs of the Church for fast, simple, and universal communication. The leadership of Ecunet is showing such a vitality and desire to change and improve that I am convinced that Ecunet will overcome its deficiencies and expand worldwide.

However, from the studies that I have done, it is my belief that a decentralized system, such as a number of diocesan Client/Server email systems, networked together, perhaps using Ecunet as the hub, will better serve the needs of a diocesan centred Church — and do it more cheaply, simply, and universally. The implementation of a network of a number of decentralized diocesan systems will take leadership and imagination at the top,

[73] This is actually one of the arguments used against the introduction of computer email systems in the Diocese of New Westminster by a diocesan leader, expressed at a committee level, in my presence. I disagree strongly with such a sexist argument, and believe that simple Email Workshops for clergy and secretaries, enabled by diocesan trainers, will put such arguments to rest. I note in Chapter Five of the Development section of this paper that the average age of lay people attending the NWnet Training Workshops was 50.3 years, and the average of clergy attending was 56 years. The lay people were almost equally divided between men and women. Participants were eager and excited about email communication, and found it much easier than they imagined.

as well as a desire to plan for the future of the Church. It can be done; in fact, where Diocesan leadership show some encouragement, it is already beginning to happen.

The purpose of this paper has been to show how a diocese can install and configure an electronic communication system, simply, cheaply, and easily, for the increased benefit of communication between parishes, priests, and people. Together with simple Workshops designed to get users up and running, the leadership of a diocese can implement the best of modern email in the Church, and save time and money in the process. Email will do more than just replace the postal service; it will initiate a sharing and communication amongst priests and laity that is badly needed. This communication will not replace face to face meetings, but will continue a daily dialogue, involving many in deciding on the changes necessary to advance the Church towards the Kingdom. A diocesan email system will reduce hierarchical thinking by giving everyone a chance to receive information, quickly, easily, and without cost, and to read and respond online to a multitude of ideas. Priests in outlying parishes will discover that they are as close to the centre as everyone else. Laity will discover that they have an equal voice with others in the discussions. Youth and seniors will discover that they can talk to each other without knowing or caring about differences in age or culture. Colour and race cease to have any consideration online — email notes are all the same for everyone. Only ideas count.

Email is not the answer for all the ills of the Church! It is only one answer that will help improve communication, while saving resources. By grasping the challenge of integrating electronic communication into the future of the Church, diocesan leadership

will have increased communication, challenged hierarchical thinking, drawn distant priests and parishes into a closer connection with the whole of the diocese, and helped prepare the Church for increasing needs of the twenty-first century. It is an idea whose time has come.

THE MANUAL

CHAPTER ONE

THE NEED FOR A DIOCESAN COMMUNICATION SYSTEM

Of what use is a computer communication system to a Diocese? Unless that question can be answered satisfactorily, information on communication systems is of little value. One way of looking at the Church is to suggest that the Church is in the "information" business. This does not, in any way, limit the business of the Church. It is obvious that the Church mediates the Grace of God to the people of God, forgives, heals, and worships, to offer only a few other things that the Church does; but transmitting information is pretty basic to the Church.

St.John calls Jesus "the Word". He sees our Saviour in terms of the Father speaking His Son to the world, in the power of the Spirit. The Gospel is the "Good News" which is announced to all people. Though the good news is about a new kind of relationship into which we can enter with the Father and the rest of the people of God, the Good News at some level is communication. It is information, at its very basic level, that needs to be communicated. The Church is therefore, whatever else it may be doing, in the "information business".

In the days of the early Church, information was shared by word of mouth, in liturgy, or by the written word. The New Testament is information about Jesus, about the early Church, and about the life of a Christian. Though much of the early teaching was likely verbal, it was soon within the history of the early Church that teachings were written. St.Paul wrote letters to the Christian communities that he had helped establish. St.John and St.Peter wrote general letters for distribution to churches within their Dioceses. Much of this information giving may have been extraordinary in their day — a day in which most information was given verbally. Though today, the sending of Pastoral Letters is quite normal, I can imagine that the idea of sending letters filled with teaching about the faith may have seemed original, even radical, to the Christians of that time.

Today, information is still handled in Pastoral Letters, or in books, periodicals, newspapers, magazines, and on radio or TV. The Church has made use of all these methods of information giving, whether for communication of the Good News to others, or for the edification of scholars, or the alerting of Christians to new developments in their areas. The Church will continue to use all these methods; they are appropriate to their specific areas, and meet specific needs.

The advent of the computer and modem began a new method of communication in our society. The computer and modem together made it possible to send images or text over short or long distances, instantly, accurately, and cheaply. Moreover, it allowed the sender and receiver to both interact with the text, to respond, to change, to revise, to add, without ever converting the text back to paper and some permanent form. This fact

makes computer communication radically different from other electronic communication such as fax or telephone, or TV/Radio. The fax machine sends information from one piece of paper to another piece of paper over a telephone line, relatively quickly, and for only the cost of the telephone call and the paper. It however is basically a one way method of communication, appropriate for a "top-down" organization, where the caller send information to the receiver in a permanent paper form.

Email communication involves processing the information into digital form where it can be sent almost instantly to one of more persons, anywhere in the world, in such a way that those persons can interact with the information, change it, or respond, without moving back into the paper media. Email communication is therefore appropriate for an organization that values responsiveness and interactive participation. It is appropriate to an organization that needs to send information to one or many people, at the same time, in such a way that each can respond to the sender, by adding to or changing the original message, or interacting with others who are wanting to do the same. In this way, email is excellent for an organization that honours both the sender and the receiver, allowing interaction, and facilitating the growth of the person. Such an organization is the Church.

Of course, the Church is, and has been deeply, committed to sending information out by mail. The use of a country's Postal Service will certainly continue. There will always be some need to use the mail system, just as there will always be a use for a fax machine. But email is a communication system that is ideal for much communication

within the Church. It is not a good medium for conversion; it is not a good medium for evangelism. In some ways, websites on the Internet can be better used for advertising or even primary evangelism. But email communication is best for the provision of weekly information from the Synod Office to priest and parish churches, for interaction amongst clergy, for discussion amongst members of committees between their specific meeting times, and for communication between priests and people at all levels.

Email is an informal medium. Being digital, it exists only on computer screens, or as strings of data flying across telephone lines or cables. Being digital, it can be modified, revised, or even deleted and sent into electronic limbo. It is fluid, not permanent; but it can be quoted in a response, saved on a hard disk, or printed on paper. Best of all, it is fast, simple and amazingly cheap.

Diocesan offices spend large sums of money each year printing information onto paper, copying that information to hundreds of sheets of paper, sorting, combining, and enclosing all that paper into large envelopes, addressing and stamping these envelopes, and then delivering this mass of paper to the postal system, to be delivered many days later, for an ever increasing cost. The labour, the postage, the time, and the paper, bring with them an ever escalating price to pay. It does not need to happen. Instead of copying the information to hundreds of sheets of paper for slow and expensive distribution, the information can be posted once to an email communication system (like a Client/Server Bulletin Board System) run by the Diocese. From there everyone, or conversely only those authorized to do so, can retrieve, read, store, or print the information at their

convenience, when and where they wish. Moreover, the information can be made available to as many or as few as the Diocesan office wishes, and once posted, it is available instantly — for free.

Of course, clergy and other users can respond to the information so posted. Clergy can post notes that either agree with, or disagree with the posted information. Others can respond to the initial responses, and a dialogue can develop — a dialogue where each of the writers is equal and free in his/her reactions. Others who are able to do so, can read all of those responses, and dialogue with one or more of the writers. And yet, the initial posted information is still there on the BBS[74] to be received, copied, or even just read. In other words, the Diocesan Office can post the same information , once for all,— information that used to be mailed out in multiple copies to the same recipients — and know that the information will stay available for everyone to read and respond as they see fit. And it is free. No postage, no paper, no hassle, no waiting. It is available to all the very moment that it is posted.

Most Dioceses could save many thousands each year in paper and postage alone, making email communication a significant saving financially. This saving can be created by sending the usual Diocesan Mailings out by email instead. An office would save by eliminating the paper cost, by eliminating the hundreds of copies, and by eliminating the postage for hundreds of mailed packages. The saving could be at least $10,000. per year, a saving in one year that would more than pay for the initial investment of a computer

communication system. As well, the labour involved in copying papers, and stuffing hundreds of large envelopes, could be better utilized doing something more useful in a Diocesan Office.

But there are benefits that outshine the economics, significant as these are. Clergy and other who download the standard Diocesan Mail can either copy or print what has been received, or delete the messages from their own hard disk. If a month later, there was a sudden need to find that formerly unimportant message, the original will still be sitting in the Diocesan Information File on the communication system, available for download.

Further, Diocesan Committees can share the Minutes of their Committee with members, and continue discussion of their concerns in their own Conference on the communication system. Such a conference can be either private for the members' eyes only, or open to the perusal of all the users of the Church communication system, perhaps allowing appropriate response from others. In effect, a Committee can find that much discussion, even voting, can occur in between their scheduled meetings in their Committee Conference. Members can either continue past discussions, or they can introduce new material and new ideas. When members arrive at the next Committee meeting, they can find that all their members have already discussed the issues before them, and have shared much information both pro and con. They arrive at their scheduled meeting as intelligent and knowledgeable participants. Important items can be made available to all members for

[74] BBS is an acronym for a Bulletin Board System

information and discussion before the meetings. Imagine arriving at a scheduled meeting ready for the final discussion and vote, instead of presenting masses of printed materials to each member at the beginning of a meeting, and expecting to have an informed discussion and decision with barely enough time to "speed read" the new data. An email system that was used regularly by a committee could change the dynamics and the understanding of its membership.

A Diocesan communication system can also include topical Conferences. Such Conferences could be topics such as Evangelism, Essentials, Healing, Ethics, Liturgy, Sermonshop, Clergy Conference, Synod, or any other topic. Such topical Conferences are usually public Conferences into which all registered users can participate with ideas, questions, discussion or the like. Conferences like these increase the sharing and participation across the Diocese, and involve both clergy and laity, both young and old. They can become centers of Christian Education, forums for discussions, even thought provoking and challenging expositions of particulars of the faith. Sometimes, sub-Conferences can be branched from the original Conference, to allow participants to pursue specific ideas or discussions, without obstructing the discussions in the original conference. Conference topics can be suggested by the Administration Committee, or by participants. Conferences are usually public, unless specifically designed as Private Conferences. In the latter case, only the Administrators of the system can create them. Public conferences may be started by registered users, as sub-conferences of original Conferences.

Conferences are the "lifeblood" of a Diocesan communication system. They allow all users to participate, to read, to respond, and to initiate discussion. They operate as discussion of a specific topic around a table, allowing all users to participate or not participate as they so wish. To keep order in a well managed system, Moderators of a specific Conference may be appointed by the Administrator. A Moderator has the power to curtail certain users who may be unruly or impolite; the moderator may even restrict certain users in the use of that Conference. Moderators have powers only as granted by the Administrators. They may or may not be able to delete messages. They may or may not be able to restrict access to the Conference. The power of a Conference Moderator is flexible, and should be determined by the Diocesan terms of reference. However, the Moderator can be a moderating and healthy influence in a Conference that engenders stability and civility.

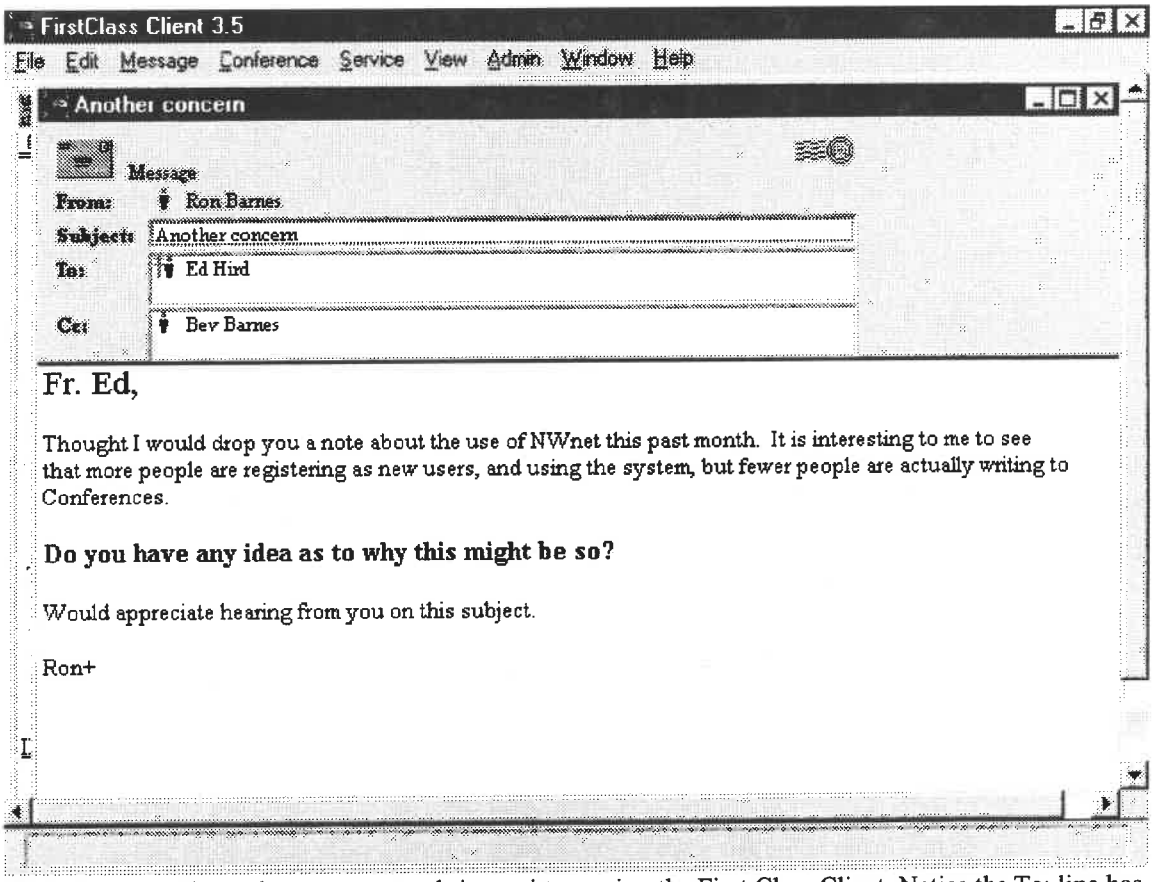
CHAPTER TWO

SETTING UP CONFERENCES

Conferences are the topical areas of discussion on the First Class communication system. A Conference has an icon with its own name, and sits on the users Desktop. When the user double clicks on the Conference icon, the list of messages that have been sent to that Conference opens up on the screen. The user can click on any one of these messages, and it will open itself up to be read.

As with all messages, the Message window is divided into 2 sections. The top section is roughly equivalent to the Envelope. It contains the Subject of the message, the author of the message, and the name of the Conference to which it has been sent, and the date of the message. As well, there is a red stamp in the right hand corner, equivalent to a postage stamp, that shows that the message has been sent. The bottom of the window is the virtual equivalent of a written message. A user can read the message, and reply to it by pressing Message, and then clicking on Reply to Message. A new window will appear on top of the original, with the name of the user, and the original message will be coloured gray, to differentiate it from the typed response to be done by the respondent. Other users will then be able to see clearly the quoted part of the original message, and the new

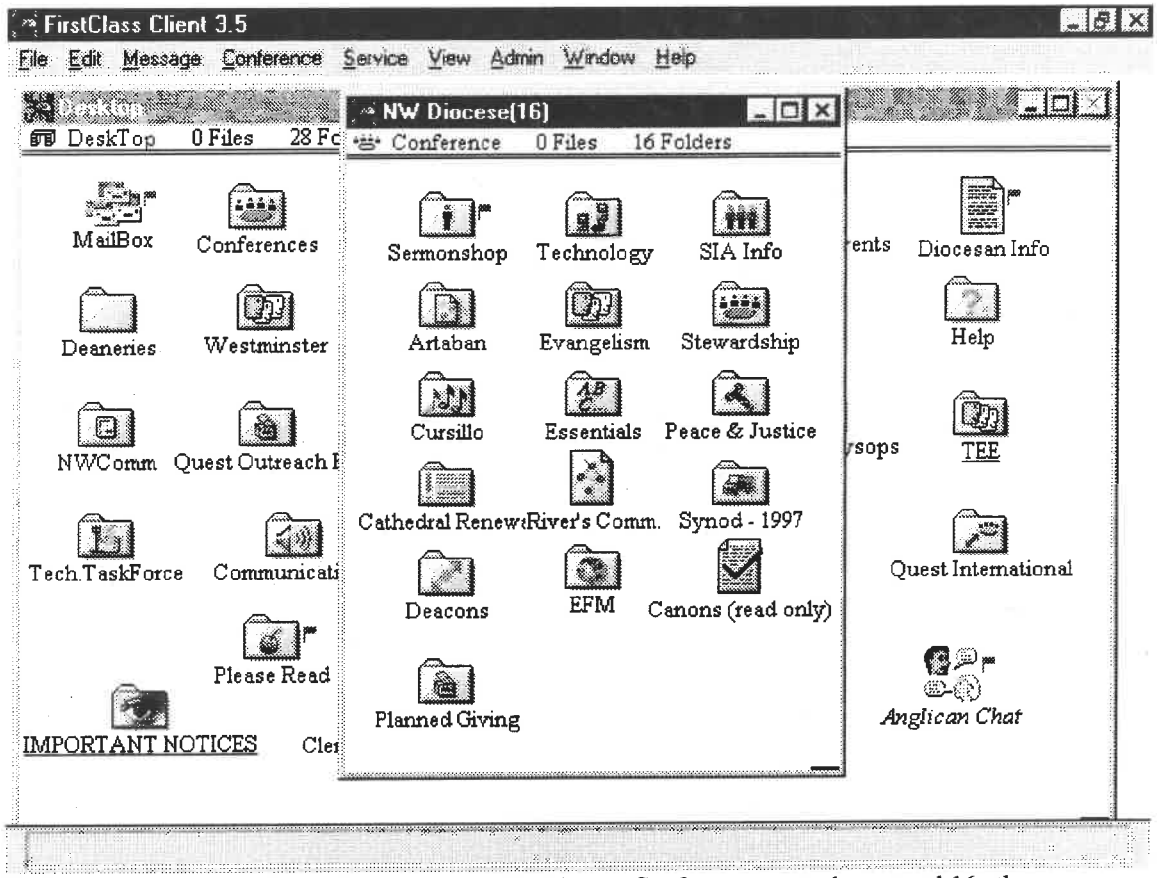
additions or responses typed in by the respondent. The quoted section can be left in full, or partially deleted to quote only those parts that are relevant to the responses.


FirstClass Client 3.5
File Edit Message Conference Service View Admin Window Help
Another concern
Message
From: Ron Barnes
Subject: Another concern
To: Ed Hird
Cc: Bev Barnes
Fr. Ed,
Thought I would drop you a note about the use of NWnet this past month. It is interesting to me to see that more people are registering as new users, and using the system, but fewer people are actually writing to Conferences.
Do you have any idea as to why this might be so?
Would appreciate hearing from you on this subject.
Ron+

The illustration above shows a message bring written, using the First Class Client. Notice the To: line has a little person just before the name of the recipient. This shows that the system has recognized the name of the recipient. This message is also being "carbon copied" to another person. Once the message is marked Sent, a postmark appears in the top right gray section, as above. Note the changes possible in kind, style, and size of type. Colour may also be used.

If a message has not been read by a user, there will be a little red flag at the left hand edge of the list of messages. Once each message has been read, that flag beside that message is automatically deleted. However, the flag can also be deleted by holding down the Control key, while clicking on the flag. If the user does not wish to read any of the

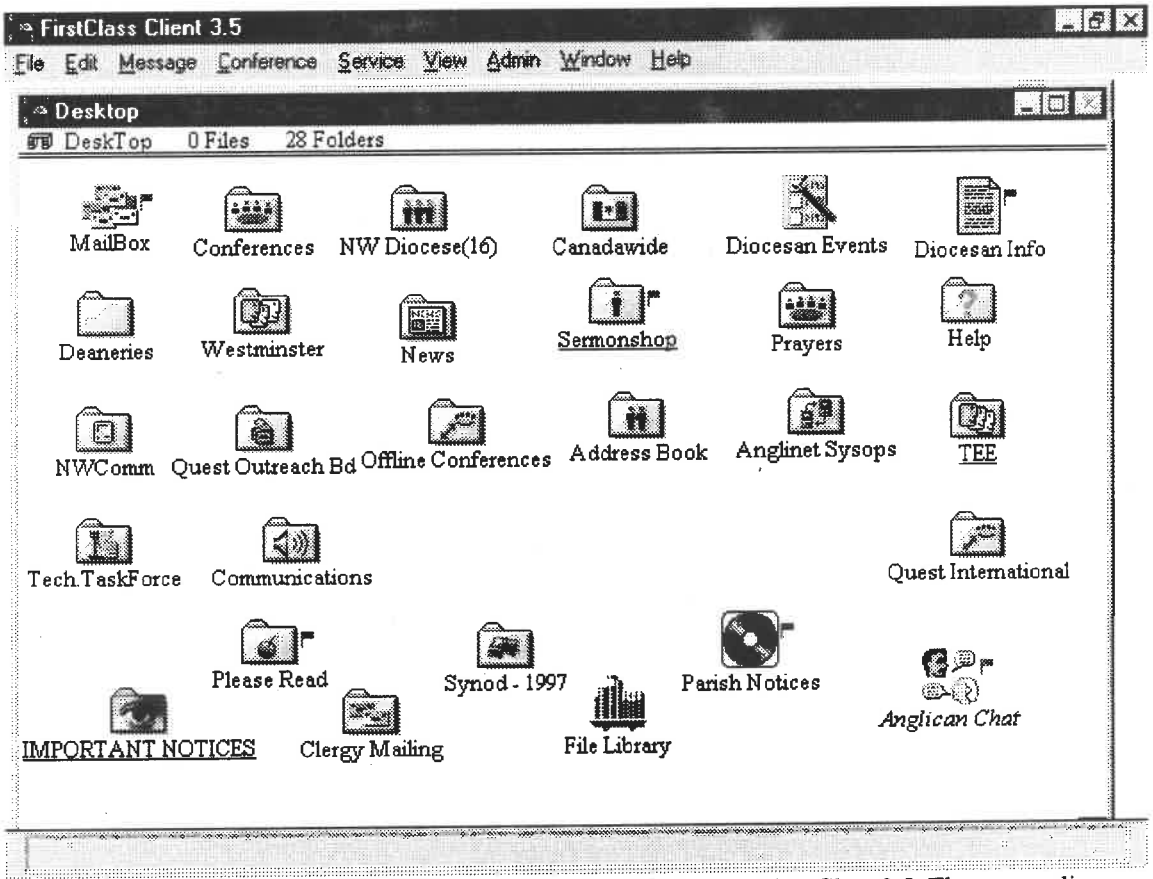
messages, the red flags can be turned off by pressing Edit, then Select All, then pressing Message, then clicking on Unread. All the red flags will then disappear.



This illustration shows the Desktop with the NW Diocese Conference opened, to reveal 16 other Conferences. Each of these Conferences has a separate message base. The Conferences Conference, the Deaneries Conference and the Canadawide Conference conceal other Conferences underneath. Note the little red flags indicating unread messages.

For the most part, Conferences are open to all registered users. However, they can be made private so that only specific users have access to that Conference. This is done in the Permissions section of the Menu, under the word Conference. Clicking on Permissions brings up a screen into which one can type the names of those who moderate the Conference, and those allowed to see it. The names of users can be specifically typed in, so that only those persons have access to the Conference. Doing it this way makes the Conference a Private Conference. For example, in NWnet, there were a number of Private

Conferences, usually for Committees who wished to have a private area in which to discuss their own business. The icon would only appear on the desktop of these specific users. By leaving my administrator's name off the list, Private Conference can be effectively kept off his own desktop; however, all Conferences were available on the Administration desktop. In this way, a diocesan email system can be accessible to the Administrator for system upkeep moments, but the Administrator can have his own desktop under his own name, that kept Private Conferences unavailable. Under normal circumstances, by using the Administrator's name as his usual Login instead of "Administrator", Private Conferences can be kept private.



The illustration above shows my personal Desktop with NWnet using First Class 3.5. The top two lines and the bottom two lines of icons would appear on the Desktop of any diocesan priest. The middle two lines contain icons of Private Conferences. Users may rearrange their own Desktop in any way they wish. Some users arrange the icons in circles, areas, or groups.

Once NWnet had become the "official" electronic communication system of the Diocese, it became necessary to reorganise the Conferences. Until that time, all Conferences had been organized into one Conference Folder. By double-clicking on the icon for Conferences, a window appeared that contained 35 icons, each one of which was a public Conference. (Private Conferences appeared on the users desktop, not in the Conference Folder.) This was easy to organize, but too large with which to work. It seemed better to group the Conferences into several general Conferences, with some individual Conferences. The final decision was to group them as follows:

N W Diocese

Artaban
Cathedral Renewal
Cursillo
Deacons
EFM (Education for Ministry)
Evangelism
Planned Giving
Rivers Comm (Commission on the use of personnel in the Diocese)
Sermonshop (from Ecunet)
SIA Info (Stewards in Action Information)
Spencer Comm (Commission on the use of property in the Diocese)
Stewardship
Synod 97
Technology

Canadawide

COGS (Council of General Synod)
PWRDF (Primate's World Relief and Development Fund)
BCAYM (British Columbia Anglican Youth Movement)
Prov Synod (Provincial Synod)
Prov Ministry
Prov Affairs
Prov Develop
Sorrento
First Nations

Other Conferences

- Bible Study
- Essentials
- Ethics
- Prayer
- Small Groups
- Youth Ministry
- Humour
- Buy & Sell

Deaneries

- Burrard
- Burnaby
- Capilano/Kingcome
- Fraser
- Gran/Grey
- North Van
- Yale
- South Fraser
- Westminster

News

- Anglican News (from Ecunet)
- Episcopal US News (from Ecunet)

Private Conferences

- BARDD (Bishop, Archdeacons, Regional Deans and Dean)
- Cathedral Chapter
- Clergy Mail (for all diocesan priests and deacons)
- Communication (Committee)
- Diocese of the Yukon
- NWComm (the committee that runs NWnet)
- Quest International (the worldwide Anglican Email network that will connect to South America, Australia, and other dioceses.)
  - Quest Coffee Hour (from Ecunet)
  - Diocese of Uruguay
- Quest Outreach (a Food Bank Society)
- Synod Office (staff only)
- Tech Task Force

Library

- General Files
- Windows Files
- Mac Files
- Text Files
- Minutes

All users *Desktops* would contain the following:

Mailbox
Anglican Chat
Diocesan Info (read only)
Diocesan Events (read only)
NW Diocese (containing icons for 14 Conferences)
Canadawide (containing icons for 9 Conferences)
Other Conferences (containing an icon for 8 Conference)
Deaneries (containing icons for 10 Deaneries)
Library (containing icons for 5 Conferences)
Help
News (containing icons 2 Conferences)
Parish News
Please Read (read only)
Important Notices (read only)

This meant that a user had a reasonably uncluttered desktop of about fourteen icons, (fifteen if a priest or deacon) plus the icons for any of the eight Private Conferences to which the user has access, and the 5 Conferences in Quest International. However, six of these desktop icons hid another forty eight icons (which in turn, could hide more icons) each of which opened into a Conference. Thus NWnet offered about fifty six different Conferences to the average user, not counting any of the twelve Private Conferences to which he or she might belong. The re-arrangement meant that it was easier to keep track of the Conferences that mattered most, and to sideline the rest.

If a user was particularly interested in a specific Conference that was contained inside other Conferences, it was a simple matter of making an "alias" of that Conference and placing that "alias" directly on the desktop. This meant that, by watching for the "red flags", a user could see immediately upon login if there were any new messages in those

specific Conferences, rather than spend time sorting through the lists of Conferences as shown above. Users thus could tailor their desktop to fit individual needs.

CHAPTER THREE

MODEMS

Modems are one of the trickiest parts of running a computer communication system. The word "modem" is an acronym of the words "MOdulator DEModulator". A modem is essentially a device that converts the digital language (the long stream of ones and zeros)[75] of a computer into analog signals (those that makes sounds, the same kind of sounds that one hears from a fax machine) that can be more easily sent over a telephone wire. Telephone wires are designed to accommodate electrical signal fluctuations caused by vocal tones, similar to a very fast wave. So a modem converts the digital language into a wave of various tones, and then sends this wave out over the telephone wire to the other computer's modem, where the tones are translated back by the other computer's modem into digital language, a language that computers can understand. Such translation, transmission, and retranslation of a tonal wave takes time. Thus computer communication is slow, compared to the internal processing speed of a computer.

[75] Digital signals are actually long streams of instructions to turn switches on or off. Thus the usual way of representing them is with Xs or Os, or as 0s or 1s. Thus a digital signal may be represented as the following: 10011001 10110010 10000110 grouped in clusters (bytes) of 8 numbers (bits), or 16 bits, or 32 bits, depending on whether the computer is an XT (8 bit), a 486 (16 bit), or a Pentium (32 bit). A computer is designed to handle settings of information in this 8, 16, o4 32 bit type of information; but it will not be long before computers are designed to handle information in strings as long as 64 bits at a time. Such a computer could handle information eight times as fast as an XT, as well as process it faster. Such is progress.

Modem engineers have been able to speed up the transmission of these analog signals by overlapping the waves. To accomplish this, the sending modem overlaps a number of waves in order to send six or eight tonal waves at almost the same time, and the receiving modem separates each of these waves, and translates them back into a long string of digital language. Modem technology originally was only able to send a tonal wave (analog signal) at the speed of 300 bits per second. Progress allowed the speed to be increased to 2400 bits per second, which became the standard for several years. However, the technology of overlapping the tonal waves allowed modems to increase their speed 12 times, up to 28,800 bits per second. Modems capable of 57,600 bits per second are now appearing on the market. However, a change in the technology is just over the horizon.

By using a TV like cable, a larger bandwidth can be accommodated[76], allowing the signals to travel faster. As well, a TV cable can handle digital signals directly, bypassing the usual modems at each end. [77] Once the modem is eliminated from the circuit, the speed of the transmission is raised to over 115,200 bits per second, and beyond. The wave of the future is to use larger TV copper cables, or fiberoptic cables[78], to transmit digital information very quickly over large differences.

---

[76] Larger bandwidth can be understood similar to the size of a highway. A one lane road will allow only one line of traffic to proceed in one direction, with speed limited to the slowest vehicle. Then the traffic must be stopped to allow other traffic to flow in the opposite direction. If one builds a superhighway, with 10 lanes in each direction, it is obvious that far more traffic can flow at an increased speed in both directions. This is what is meant by increasing the bandwidth. Telephone lines are rather like one way streets. TV cables can accommodate many more streams of signals (each stacked one above the other) and thus can accommodate faster and different signals. Larger bandwidth is thus a great advantage for computer communication.

[77] If computer communication becomes digital (bypassing modems), it will greatly speed up transmission of material; however telephones will then need modems to change their analogue signals into digital signals for transmission over cables.

[78] Fiberoptic cables are essentially long unbroken strands of glass, through which signals of light waves are transmitted, instead of pulses of electricity over the surface of a copper wire.

All of this would be difficult enough, if modems were standard; but they are not. Different modem manufacturers use different techniques, and different commands in the operation of their modems. In order that modems built by different manufacturers can actually transmit data from one to the other and be understood, modem manufacturers tend to use similar commands for their modems. The most usual set of commands is called "Hayes Compatible", since the Hayes Corporation developed this set of commands for their modems, and allowed others to copy their commands. Without this agreement on the commands used by modems, modems would not be able to understand what other modems were sending. There are five major sets of modem commands in North America at the moment, with "Hayes Compatible" being the most universal. Unless one is running a system separate from everyone else, with no desire to communicate with anyone else, it is advisable to be sure that all modems used in a computer communication system are "Hayes Compatible".

Many first time users experience problems setting up their First Class Client. It can indeed be a frustrating experience, until the problems are solved. Usually the solution is found in selecting the correct initialization string for the modem, and then setting the handshake, carrier detect, DTR, and autospeed correctly. In the latter case, First Class recommends that the handshake be set to ON, and the carrier detect, the DTR, and the autospeed be set to OFF. The Baud rate should be set to a speed slightly higher than the rated speed of the modem.

However, the tricky part is finding the best modem initialization string for the Setup Screen in the Login section of the First Class Client. SoftArc does not allow a modem initialization string to be typed into its Setup screen; instead the Client provides a varied list of modem settings, according to the name of the modem, and expects the user to click on the appropriate setting. It would be simple and easy if it worked; and with some modems, like USRobotics Sportster modems, it does. But with many others, it doesn't. Finding the best modem setting is a trial and error method, frustrated by the software's message that the "incorrect modem setting has been chosen". Using one of the Hayes settings works best; and failing this, the selection of the NOSETUP setting will allow a connection, enough to get a user online before total frustration sets in. Since many users simply do not know the name of the modem installed in their computer ("It just came with the computer when I bought it..."), there needs to be a better method of getting the right settings. Perhaps a programmer could write a software program that would automatically check the already installed modem, determine the best initialization string, and suggest several best settings for use with the First Class Client. Such a program could be bundled with the First Class Client, and go a long way to solving the biggest initial headaches with making a connection. Once the correct settings have been found, connecting to the First Class Server becomes simple and flawless.

Modems come as external, or internal modems. The external models are attached to the computer by a serial cable[79] to one of the Communication Ports[80] and by a

[79] Be sure it is a "handshaking" modem cable, that will allow the 2 modems to synchronize the communication connection.

telephone wire to one of the RJ11 jacks (wall plugs) installed by the telephone company for the connection of telephones to the Telephone Company's system. Such an external modem comes with its own power supply built in, plus a small transformer that plugs into the 110 volt electrical socket, and reduces the power to approximately nine volts. An external modem comes complete with a case, which sports an on/off switch, some small lights that indicate what the modem is doing, and often tiny switches at the rear to set the modem for specific needs. An internal modem plugs into the motherboard of the computer, thus eliminating the need for a separate power supply. The telephone line plugs into an RJ11 jack built into the back of the internal modem, flush with the back of the computer. The internal modem is thus somewhat cheaper, but has the disadvantage of not having lights to indicate what it is doing, nor a switch to turn it on or off. The latter is very helpful if the modem gets confused and stops operating — it is easier to reset the modem by turning it off and then back on, rather than turning the computer off, and rebooting. For most purposes, an internal modem is fine; however, in order to manipulate the modems, and to know at a glance how they are operating, the Server of a computer communication system is better served with two or more external modems.

[80] A normal PC has 4 serial Communication Ports (COM ports) that allow the computer to receive information from outside of itself (not sent by the keyboard) or to send data to another computer. These are called COM1, COM2, COM3, and COM4. Unfortunately, owing to the design of the computer, COM1 is connected to COM3 in such a way that if one is in use, the other cannot be used. Since many computers use a serial mouse, which is generally plugged into COM1, COM2 or COM4 are the only ports available for use by a modem. And if a modem is using COM2, COM4 cannot be used at the same time. Don't blame me — it all has to do with the design of the original computer. One can purchase hardware that will solve this problem, and increase the number of COM ports available to 4, 8, 16, 32, or more. One can also connect two modems to a computer, if the mouse is connected to a board that is plugged directly into the motherboard of the computer. Such a mouse is called a bus mouse. I recommend using a bus mouse in all cases, leaving the COM ports free for modems or other peripherals.

Experience has suggested the use of USRobotics modems, and in particular external 33,600 fax modems. This was done in the belief that USRobotics modems were the most universal and most readily available modems. Their price is often slightly higher than some other modems. But for reliability, it is hard to beat USRobotics. It mattered little what modem the users had in their computers. It was the reliability from month to month of the external modems that were connected to the Server that made the difference. If a USRobotics modem failed, it was possible to return it to the dealer for an exchange with another modem. There is a five year warrantee with these modems, from the manufacturer, and this made them a good purchase. Over the course of time, two modems were returned, both of which had been in service for over one year — and each time a full exchange for a new modem was made by USRobotics. Such excellent service is hard to beat today.

The modem is connected to the wall jack by a short piece of telephone wire, with an RJ11 plug at each end. Normally this would be only about six feet long. However, while doing Workshops, operation was still possible even when a computer was connected with one hundred feet of phone wire to a telephone wall jack. Most would suggest that a connection fifty feet long is reaching the upper limit of connection; as a general rule, it is helpful to locate an RJ11 jack close enough to the computer to keep the connection within ten or fifteen feet.

The modem is connected to the computer with a serial cable, which should be of the "handshaking" variety. The connection on the back of the modem is generally a twenty

five pin serial female connection. The serial modem cable thus needs to have a twenty five pin male plug at one end. The other end of the serial cable can be either a twenty five pin female connection or a nine pin female connection. Most computers have a nine pin male plug as the connection for COM1. If the mouse is plugged into COM1, then the serial cable needs to plug into COM2, which tends to be a twenty five pin male connection. Because of this difference, few modems come packed with a serial cable. Computer stores will sell the appropriate serial cables, so it is helpful to know beforehand which size cable is needed.

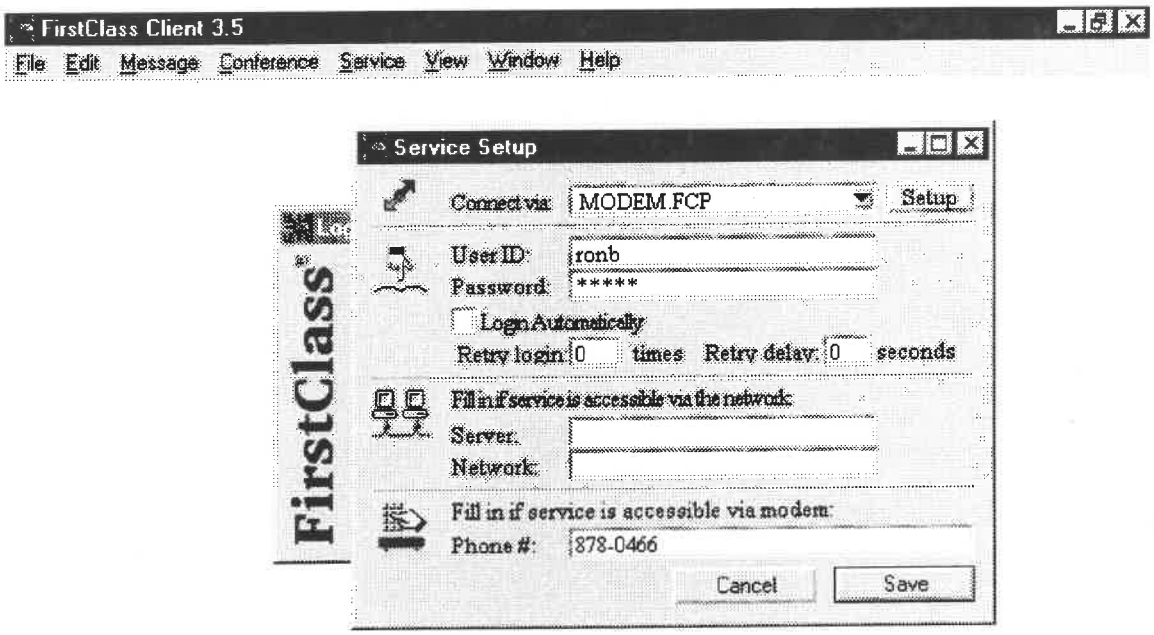
Modems are usually set up by the manufacturer to function on COM2, though some are oddly enough designed to function on COM4. If it is necessary to change the modem, internal modems can be changed by resetting the pins or jumpers on the modem, according to the installation booklet that comes with the modem. External modems do not need this adjustment, since the adjustments can be made on the I/O card of the computer, into which the modem is plugged. Consult the installation booklet that comes with your computer for directions on the changing of the COM ports, or ask your dealer. If you are using Windows 95 or Windows NT 4.0, modem manufacturers will advise that you remove the jumpers entirely, and allow the Windows 95/NT4 software to manipulate the modem. Do not attempt to place your modem on COM3, if your serial mouse is plugged into COM1. Remember that COM1 and COM3 are linked together; if COM1 is being used by your serial mouse, connecting a modem to COM3 will crash both the mouse and the modem.

Most modems have the ability to send and receive faxes as well as data. Software, such as WinFaxPro, can work smoothly with word processing software, such as Microsoft Word for Windows, to enable the simple sending of a fax, directly from a parish computer. Some modems[81] can also function as automatic Answering Machines, with Voice Mail, Voice Mailboxes, and automatic Fax reception.

A recent addition to modem technology is its ability to connect via cellular telephone. How often this technology would be valuable to clergy is debatable, however it can be of help to Diocesan officials who are traveling with a laptop computer. If the modem has been designed to connect to a cellular phone, as well as a standard telephone connection, the installation is easy. The software is installed automatically when the modem is installed. A special cable connects the cellular phone to the laptop modem. The computer is turned on and set to the communication program before the cellular telephone is turned on. When the appropriate beeps are heard that indicate the connections are ready, the cellular telephone is turned on, and the Client program is activated for Login. The Client will dial the number for the computer communication system, and the cellular telephone connects as usual. The connection is made, and data can be sent back and forth. There is no difference in using the Client program. However, the usual cost of connecting by cellular telephone must still be paid. At the time of writing, this was anywhere from twenty five to sixty cents per minute — so a ten minute connection would cost two dollars

[81] I refer particularly to the USRobotics 33600 Voice Fax/modem which comes complete with the software and hardware to run a simple parish Voice Mail system, complete with Fax reception. More and more manufacturers are adding this capability to their high speed modems, at only a small increase in price. They make an interesting purchase for a small parish, wanting to have all the advantages of a larger one at very little extra cost.

and fifty cents to six dollars, plus tax. For a person using a laptop in a remote area, this may be quite acceptable. The need will dictate its usage.



The above illustration shows the settings for connection to NWnet via a modem.

CHAPTER FOUR

CHOOSING THE COMPUTER

The manufacturing of computers is an ever changing game. Even while retailers and advertisers are praising the increased speed of the latest computer, the manufacturers are working on the next generation of computer chips. Thus by the time everyone is purchasing a Pentium, manufacturers have already ceased making those chips, and are fashioning the P6 chips. Today's fashion is tomorrow's garbage. It was ever thus.

Most communication programs will operate quite nicely on a 486DX100 computer. For example, NWnet was converted to run on such a computer, although it had been originally setup on a 486DX40. The increase in speed was noticeable, though not particularly necessary. If NWnet had been run on a Pentium, few people would have noticed any difference, except for an increased speed in searching for mail. A Pentium however became necessary when NWnet upgraded the Operating System from Windows NT 3.51 to Windows NT 4.0; the later version of Windows NT needed the power and speed of a Pentium to operate the newer software, and monitor the modems satisfactorily. The speed of the computer communication program is determined by the speed of the modems and internet connection; but the OS will determine the kind of CPU.

What is most important for speedy and efficient operation is the amount of memory, RAM [82], in the computer. The First Class Server demands either Windows NT as an operating system, or the use of a powerful MAC; and Windows NT takes about sixteen megs of RAM simply to run the operating system. The communication system needs some RAM for itself, and thus the minimum amount of RAM for a system using Windows NT 3.51 was determined to be twenty megs.[83] However, if the system uses Windows NT 4.0 as the Operating System, a minimum of 24 megs of RAM will be needed. This is a bare minimum, and experience has suggested that 32 meg of RAM is to be preferred. This gives the communication system more "elbow room" in which to function, reduced the possibility of "crashing", and increases the speed slightly. It certainly makes the programs operate more easily, since there is less need for the system to recycle parts of the program to and from the hard disk. More of the program can be brought into the computers memory while functioning, with a resultant increase in speed and efficiency.

As the number of users increases, so will traffic over the modems. The modems are designed to answer the call on the first ring, and to pass the calling information on to the computer. Most modems will do this adequately. But as the traffic increases, the relative effectiveness of the modems will decrease. This is not the fault of the modems, as might be suspected, but the fault of the relative slowness of the CPU being used as the "engine" of the system. Users accessing the system via the Internet will have no problem, but those accessing the email system via modems will having trouble connecting. The

---

[82] Random Access Memory

[83] Twenty four megs of RAM if using Windows NT 4.0

solution is to upgrade the CPU. Experience suggests that though a 486DX100 will run a First Class Client/Server system, it is better to start with a Pentium 120, using PCI architecture, with the serial ports built in. The amount of CPU time needed by the Server will decrease significantly.

A Server should use at least a 1 meg hard disk, for program and file storage, though a 2 meg hard disk will provide greater storage for Files and old messages. This moderate size hard disk will function well, and serve adequately for several years. At no time should the hard disk become more than three quarters full, or the system will spend too much time hunting for disk space. It will always be easy to find whatever storage space is needed, as the program stores messages or files, or retrieves them for ongoing transmission.

Adequate "Back up" is important. Hard disks fail — it is never *if*, but *when* — so regular back up must be done in order to keep the system from losing all its data. "A crash can spoil your whole day!" and keep you scrambling to restore what little data you can still save; the last thing the administrator will want to do is reinstall the whole system on a new hard disk having lost everything from the very beginning. The simplest system for back up seems to be the use of a tape drive, installed in the computer. There is a problem however in finding a tape drive that will work properly with Windows NT 4.0. As Windows NT becomes more popular, such a problem may cease to exist. However, even then, finding a back up tape drive that will work with both Windows NT, and say Windows 95 (that may be on your other computers) is well nigh impossible.

One way of solving this problem is to purchase a second hard drive that is installed into the Server. From time to time, the original hard drive can be copied to the second hard drive. Since it is unlikely that both hard drives will crash at the same time, you always have a complete system back up of the original program and data. Changing from the crashed hard drive to its twin in the computer can be as simple as changing the designation of the hard drive in the CMOS from C: to D: However, providing the two hard disks are twins, it is better, in my opinion, to open the computer case, and interchange the plugs from one hard disk to the other, rather than to go throughout the program setup changing setting from C: to D:. Then the crashed disk can be removed and re-formatted, while the computer gets back online running the Diocesan computer communication system. The price of hard disks has dropped so much these days that it is reasonable to run a slave hard disk inside the computer simply as a backup of the original disk. If the second hard disk is an exact duplicate of the original hard disk in every way, even the CMOS data can remain virtually the same.

Rather than duplicating the hard disk, the back up issue can be solved by using a portable Zip drive. Depending on the type used, this can plug into a parallel port, without requiring a SCSI port. If so, the Zip drive can be used for backing up a series of computers, including those using either Windows NT 4.0 or Windows 95 Operating Systems. The cost savings using this method, over installing tape drives into each computer can be significant.

It is worth checking to see if the Internet Service Provider can provide an automatic backup of email system stored at his address; if so, the ISP could back up the diocesan email system at night, every night. For most situations, this would be an ideal way to solve the backup problems, though somewhat overkill for most dioceses. Whatever method is chosen, the hard disk must be backed up regularly without fail, or the entire list of users, passwords, message databases, and everything, will be lost when the system crashes.

The size of the computer case would seem to be of no importance. Any tower case should do, as long as there is adequate space inside for the components, and adequate cooling. Cooling is important, since the Server computer will be running all day and all night. [84] However, check that the Server case will fit the size of the rack provided at the Internet Provider. In the case of NWnet, the original twenty one inch high tower case, and had to be changed to a fifteen inch case. The computer will need to be stored horizontally in the racks provided; adequate space must be included for cooling purposes. The modems can be attached to the side of the computer facing out from the racks, so that they could be watched or easily manipulated.

---

[84] In my opinion, it is better for a computer to be running 24 hours per day than to be turned on and off. Once the computer parts have heated up to standard operating temperature, they remain at that temperature without cooling and heating again. An electronic device operates best at a steady and unchanging temperature. Of course, more electricity is used, but the amount is equivalent to about a 150 watt light bulb. When measured against the cost of replacement of parts, this becomes a minor cost. Of course, if you are only using your computer for a short time each day, there is no need to leave it on; however a Server computer will be operating all day and all night. It is better for the computer to be left on and never turned off, except for servicing. Others may dispute this, but that is my opinion.

The size of the Monitor is of no importance. A simple SVGA fourteen inch monitor is perfectly adequate for the Server. It is in use while installing and maintaining the system, but at other times is turned off to save electricity. So save cost and space, an external switch can be installed next to the monitor so that the same monitor can be used for both the Windows NT Server running the system, and the small MAC computer beside it running the UUCP[85] or the SMTP[86] program which connects the system to the Internet.

[85] Unix to Unix Communication Protocol

[86] Simple Mail Transfer Protocol

CHAPTER FIVE

BROCHURES

It is one thing to setup and run a good communication system; it is quite another thing to make sure that everyone knows that the diocesan communication system exists. Advertising is vital to informing others what is available. Within the church, such advertising can be difficult, if the bureaucracy is not particular knowledgeable or interested in what is being done. The method used for NWnet was the printing of brochures.

The brochures can be designed as a two fold piece of letter size paper, or a three fold foolscap paper. The brochures are a simple inexpensive means of advising priests, parishes and people of the existence and abilities of the computer communication system. They can be printed inexpensively, distributed at Diocesan Synods, and sent to parishes through Diocesan Mailings. It is advisable to change the brochure each year, reprinting it using a different colour. Unless at least the colour is changed each year, people assume that they have already read it, and throw it away, even though all the inside information may be different. Changing the colour, and possibly some of the artwork, will indicate to people that it is new information, and thus they are more likely to read it. If some shade of red or mauve ink is used, the colour will not only attract attention, but will hint that the information inside is exciting and helpful. If the brochure is printed with blue or black ink,

people will find it less interesting, and fewer will open and read it. The small extra cost of printing in colour can be repaid with a larger readership.

Brochures are simple, convenient, easy to handle, and can offer a variety of printed information. Each of the brochures should contain information about what the computer communication system can do, as well as simple instructions for the inexperienced computer person to connect to and use the system. It need not be a full manual of instructions; just simple details for dialing into the system, reading and sending messages, and suggestions as to what to do with the information.

If one wants to do the best possible job, the design of the brochure can be entrusted to a firm competent in the creation of artistic brochures. The firm will advise on changes in the typeset, the use of white space, and the kinds of illustration. Paper can be chosen to provide a harder more attractive finish, yet be made from recycled stock for ecological purposes. The foolscap size should be chosen to include as much instruction as possible, in a three fold brochure. The cost will be higher, but it may seem more important to attract interest with a more readable brochure, rather than struggle to save a few extra dollars. Unless a Computer Communication system can build an enthusiastic user base as rapidly as possible, it will be of little value to the Diocese as an interparish email system.

Brochures can be distributed through a variety of channels: through Diocesan Mailings to parishes, at Synods or Conventions, and at the Workshops. Clergy can be invited to take a supply back to their churches, and distribute them to members of their

Parish Council, with some left at the rear of the church for other parishioners. Delegates at Synod can take extra brochures to pass along to others at their church, or to post on notice boards. Committees of the Diocese should be specifically asked to give one to each of their members, to encourage the use of the email system for Diocesan committees. In this way, brochures can be spread far and wide across the Diocese.

CHAPTER SIX

THE OPERATING COMMITTEE

The modern Church is wedded to committees. Perhaps this expresses the innate democratic beliefs of the Church. Perhaps it is a way of diluting the individualism that is so much a part of our contemporary society. Perhaps it is a deep-seated suspicion of one person following his or her personal vision of how things could be made better — what in the past might have been denigrated as "empire building". It is difficult to decide anything within the structures of the Church without setting up a committee or task force, or some sort of group that can protect the Church from the vision or desires of a prophet. This is a pity, because committees tend to rule against personal vision in favour of a bland universal practicality; yet it is an advantage if things go wrong since no one person need shoulder the responsibility — it is hard to assess either praise or blame when the decision is made by a committee.

Whatever the reasons, it is important that a diocesan communication system be administered by an Operating Committee made responsible to a diocesan Standing Committee. The lines of control, and the terms of reference must be clear before the communication system can begin to operate effectively within the Diocese. This means that if the communication system is originally set up by one person, who may have

sacrificed much to have created the system, it must be moved to the control of a committee that has lines of responsibility to other diocesan committees. Of course, it would be better if a committee had had the original idea, and taken responsibility for the creation of the communication system from the beginning, but committees do not usually act in this manner. Committees by and large support the status quo.

Members of the Committee should be chosen for their abilities in computer communication, for their ability to get along together, and for their desire to work together to create a Church related BBS. They need not meet together regularly. Meeting online in a Private Conference is usually enough for creative people. By messaging regularly in the Private Conference, members can share their ideas, query the other members, and generally share the work, especially if they are all granted sub-Administrator status so they can each administrate the system. If a member will not share on a Private Conference regularly, he or she is probably the wrong person for the Committee. The whole point of a Diocesan BBS is to share info and initiate dialogue amongst people of the Diocese; if a Committee member will not do this eagerly, he or she is probably the wrong person to be serving on a Diocesan BBS Committee, no matter how great their abilities. They can always be asked to be a consultant.

The Committee members must be included in all the plans for the BBS. Everything should be discussed in the Committee's Private Conference before being applied to the BBS. Otherwise, the morale of the members will be undermined, and they will doubt their usefulness.

CHAPTER SEVEN

POLICY STATEMENT FOR A DIOCESAN SYSTEM

The following Policy Statement for NWnet was designed to meet the concerns of the Diocese of New Westminster, Vancouver, British Columbia. These ideas can serve as reference points for specific Terms of Reference for any Diocesan system. Terms of Reference (or Policy Statements) are helpful for those supervising the communication system. They spell out lines of responsibility or control. They show what the communication system is expected to do and what it is not to do. Careful attention to the Terms of Reference can prevent headaches or misunderstandings down the line.

Policy Statement for the Diocesan Communication System:

1) NWnet is designated as the official Electronic mail and bulletin board system for the Diocese of New Westminster.

2) Access to the system will be provided free of charge to any parish, parishioner or group within the Diocese to enhance communications within the Church. A nominal donation is requested to cover the cost of printing and copying instruction manuals and similar material.

3) Users who register are contacted to ensure that they are members of this or another Anglican Diocese. Members of the Diocese of New Westminster have priority over others for registration on the system in the event that there is a shortage of available licences.

5) The system may be used for purposes connected with the work of the Diocese, including the following:
   a) communications between the Synod Office, clergy and lay people of the Diocese,
   b) sharing material and resources from the wider Anglican Church,
   c) disseminating information about events, activities and issues of interest to Diocesan members,
   d) communications involving the work of Diocesan and parish committees and units,
   e) employment and volunteer opportunities for clergy and lay people.

5) Individual user mail boxes are completely private and cannot be accessed by anyone except the user. Access to private conference boards is restricted to people who are registered by the system operator to use them. Public conference boards can be read by any user.

6) Responsibility for administering the system on behalf of the Diocesan Council rests with the Diocesan Communications committee, which may delegate monitoring, maintenance and other routine duties to the Technology sub-committee. Moderators may be appointed to monitor individual Conferences.

7) The Diocese reserves the right to delete material from Conferences to which the system operator has access if it might be illegal, abusive, or contrary to the canons of the Diocese.

8) Material may be deleted or moved if it appears to have been sent to the wrong Conference.

9) The Diocese reserves the right to cancel a user's access to NWnet for improper use of the system.

10) A user who requires assistance with installing or operating the NWnet system should contact the principal system operator who, if he cannot deal with the problem immediately, will pass the request to another member of the sub-committee for action.

Dated: June 1, 1997

CHAPTER EIGHT

USE OF THE INTERNET

The Internet is one of the most fascinating and encouraging examples of computer communication of the nineteen nineties. The Internet is a network of Internet Service Providers around the world, all connected on permanently purchased telephone lines, who exchange packets of information from one to the other at the speed of light, without long distance toll charges. The ISPs [87]are themselves commercial operators who are linked into a network. The whole is paid for by fees paid to those above, and collected from those one step below, with 30 million individual users paying a small amount each which sustains the whole system.

Beginning in the sixties, the system was first designed and implemented by the American Government, as a system of communication between government and military establishments that was so widespread and diffuse that it would be virtually impossible for any enemy to destroy it. As it developed, American Universities and their Departments of Science and Research were tied into it, to allow them to communicate with the military while working on government contracts. Within a short time, universities, colleges, and

[87] Internet Service Provider

industry had found a way to connect with each other, and were using the Internet for their own purposes, sharing ideas and new papers from colleague to colleague.

The rapid growth of the internet happened in the nineteen nineties, when the average person discovered the Internet, not just as means of sending e-mail, but to curry information from numerous websites, set up by industry, commercial retailers, schools, libraries, and religious bodies. The growth of the World Wide Web on the Internet has been phenomenal. The number of users has doubled annually. It is expected to grow from about thirty five million at the end 1996 to one hundred and sixty million users by the year 2000, according to a Salomon Bros. report.[88]

At the present time, in greater Vancouver, about one in every three households possesses a computer, while nine percent of the total population of BC has an internet connection. If predictions are correct, this will mean that two out of three households in the greater Vancouver area should have a computer by the year 2000 and almost forty percent of households will have an internet connection for that computer. The percentage rises when we consider only those households who are college graduates. Since Anglicans tend to be found amongst those with a higher level of education, it is safe to predict that Anglican homes will have a higher chance than average to contain a person possessing an Internet connection for their household computer.

[88] As quoted in "Gridlock on Info Highway" by Kevin Maney, USA Today, page 2B, January 20, 1997, USA Today.

Most churches in a Diocese possess a computer onsite, and if not on site, in the priest's home[89]. Many of these will have a connection to the Internet. Those which do not, can still have an Internet connection through their own Diocesan BBS, providing that it is sited at the Internet itself. The advantage of connecting the Diocesan communication system to the Internet is that it allows a number of Diocesan systems to connect (gateway) from one to the next. The connecting link, of course, is the Internet. To date, very few churches have a subscription to the Internet; but a connection to a Diocesan communication system is more than likely as the Diocesan officers begin to use the systems more readily. As this grows, it is likely that a parish church will also consider being linked to the Internet. The information available on the Internet, as well as the ability to link directly to the Diocesan communication system is significant. This has an added thrust for those parish churches which are distant from the main centre. Once a parish church has paid for a subscription to their local Internet provider, that church can connect directly to the Diocesan system without any long distance charges. Unlike many things in the Church, the benefits of a Client/Server communication system pay off sooner and more directly for the smaller and distant parish. Thus the Internet, when connected to a free Diocesan communication system, can provide a link for the more rural churches that gives them equal access to information. Not very many advances for the church in our society can be of immediate benefit for the smaller more rural parishes; the Internet connection is one of them.

[89] As found in the "Survey of Computer Usage in the Diocese", December 1995, 72 of the 80 parish churches in the Diocese of New Westminster possessed a computer. Even a higher percentage of clergy possess their own computer.

CHAPTER NINE

QUEST — THE ANGLICAN ONLINE INTERNATIONAL CONNECTION

In 1988, the Lambeth Conference [90] passed a motion setting up a computer communication link for all Dioceses in the Anglican Communion. The link has not at this time been effected. But personnel were appointed, who began the Anglican Communion News Service, and the Episcopal News Service. Several times per month, news pertinent to Anglicans around the world is distributed using Ecunet to all those who purchase a membership in Ecunet. Quest is one of the participating groups in Ecunet, and has been a continuing partner in the evolution and growth of Ecunet over the years.

In May 1995, at a meeting of the Quest Board during the Ecunet Conference in Baltimore, a decision was made to create a pilot project to connect four Dioceses of the Anglican communion together using First Class Client/Server Software, hopefully to be funded by Trinity Funds, New York. The decision re the network was made on the basis of using presently existing Diocesan systems, where the hardware and trained personnel were already in place, thus keeping costs to a minimum. The only costs would be the

[90] Lambeth is the Conference of Anglican Bishops from around the world, that meet at the invitation of the Archbishop of Canterbury, at Lambeth, England, every 10 years.

purchase of a computer to be located at Seabury-Western College, near Chicago, that would be the server for the system, plus the software for each location.

For a variety of reasons, this pilot project was not attempted. The funding was not available for any project in North America, and the cost of software from SoftArc was considerably higher than expected.[91] Nothing happened in 1995 or 1996. A specific offer was made to the Quest Board members to use the existing NWnet system, running First Class software, as the Server for the Quest pilot project, but though the idea was received, and even welcomed by at least one member, no decision was reached.

In late 1996, a second offer was made to the Quest Board to gateway the Quest network using the existing NWnet system. The offer was presented, and initially accepted; however, questions about ownership of the server, and Diocesan acceptance seemed to doom the offer to be submerged in a sea of bureaucratic questions. An informal suggestion of beginning a gateway with a Diocese in Australia was accepted, and work was set to begin with this in the spring of 1997. However this too never happened.

In the spring of 1997, the Rev'd Peter Moore, a priest of the Diocese of Uruguay, was informed about NWnet, and using his internet connection, connected to NWnet. He was impressed enough to begin discussions with both Quest and with NWnet

[91] SoftArc Ltd. sets prices based on industry standards, that are easily afforded by the industrial world, and then discounts these prices to make them affordable for tax supported educational institutions. The prices are still high for charitable groups like the Church. Some restructuring of prices for charitable institutions would help the Church make better use of such systems. It seems that the pricing of software was a major reason for the failure of the Pilot project to be actualized, together with personality struggles on the Quest Board.

about the suitability of siting a First Class Client/Server system in his Diocese. With the approval of his Bishop, he obtained funding through Quest to purchase a Pentium 166 computer, and the software from SoftArc. I was asked to advise him on the creation of such a system, and quickly agreed. The creation of such a Diocesan system, in the southern half of the globe, was an important pilot project that demonstrated the viability and the ease of communication from one part of the Anglican world to another. If it could succeed in the Diocese of Uruguay, it could succeed almost anywhere else.

When the Diocese adopted NWnet as its official email system in February of 1997, one of the problems for Quest was solved. It seemed that some members of the Quest bureaucracy were unhappy about using a system that was not officially owned by a Diocese. With the formal "adoption", concerns were eased, though no funds were available since Quest had already spent all its funding on the Australian connection, which had not been completed, and there would be no funding for a gateway at NWnet.

In the spring of 1997, experiments were begun on NWnet to explore the possibility of using NWnet as the Server for Quest International. Initial private Quest Conferences were created that could be accessed by users on the Internet, and different members of the Quest Management Team accessed the system for information purposes. In May 1997, I was invited to join the Quest Management Team, and appointed to the Ecunet Board as a Quest representative. Since Ecunet was beginning the search for a new operating system and communication software, I was immediately drafted to the Ecunet

Development Committee, where I was asked to set up a First Class Client/Server system and a First Class Intranet Server (still in beta format) for demonstration purposes.

The proposed move by Ecunet to a more contemporary and powerful email system will have many good results, both for Ecunet and for Quest. It will allow Ecunet users to access their email system in graphical form, to include illustrations and pictures in the middle of the text, and to access Ecunet via the Internet. Most of all, it will allow Ecunet to expand ultimately to one million users, instead of the eleven thousand users as at present. It will allow other church systems, like Quest International, NWnet, and other systems using First Class to gateway into Ecunet. Such interconnection will mean that Ecunet will become a "hub" for many church email systems. It will allow all Diocesan systems to have their own private Conferences, but provide a gateway for all of the users to connect and share worldwide. Such a vision is truly ecumenical and magnificent. It is a vision that will take Ecunet well into the twenty first century, as the leader in religious email systems. Quest International should be a partner in this vision for the future.

CHAPTER TEN

COSTS [92]

Email systems run on a computer called a Server. The Server should be at least a 486DX100, with 32 meg of RAM, and a good sized hard disk. Such a computer will probably cost $1,500.00 Canadian, plus taxes However, I would recommend a Pentium 133 for better operation, and a minimum of 32 meg RAM. That should raise the price to about $2,000.00 Canadian. Two good external modems will cost $200.00 Canadian each.

If one can find a friendly Internet Provider, who will provide the monthly space without cost, you will be in luck; otherwise count on $300.00 Canadian per month.[93] The telephone connections will cost a minimum of $20. per month, if residential, or $55. per month if business, depending on the rates from the local telephone company. Expect no discounts from the Telephone Company. Add some more for Long Distance charges that may be made seeking advice or help.

---

[92] There is always someone who asks this question. No matter how good something is, no matter how important, no matter who needs it, there is always someone who measures everything in terms on dollars and cents, and will ask the question, "...But how much does it cost?... For that person, this chapter was included. For the rest of us, who measure life in terms of relationships, I recommend the skipping of this chapter.

[93] You may discover that the local TV Cable company offers an Internet connection that will bypass the ISP. Or the local telephone company may provide an ISDN phone line at a reasonable cost.

Software is expensive. Many people have been involved in its creation. The retail cost of the software running NWnet is approximately $6,000.00 Canadian. However, an educational discount may be applied which should shrink this cost about 40%. SoftArc provides all upgrades for free. So the initial investment is the final investment for the software. This is one of the many advantages of using First Class Client from SoftArc. SoftArc maintains a daily Help telephone line, as well as an email system that is easy to use; it provides a working example of a well designed system.

Most Dioceses can find computer experts amongst parishioners who will install the equipment and software for free. However, the Committee running the communication system will need some training. SoftArc offers training programs for Administrators that could be a wise investment. The two days training program provides background experience that allows one to continue training using the manuals. The discounted educational cost of the Administrators Training Workshop was $700.00 Canadian.

Administering the system, and doing the training can be done by the Committee, or by a committed and interested priest or layperson in the Diocese. There is no substitute for such an individual. Consistent administration at the beginning will pay off later in good Training Sessions for others later on.

Summary of Costs: (taxes are not included)

Startup Costs -	
Computer	$2400.
Modems	$ 400.
Training for Administrator (each)	$ 700.

Software	$4000. (educational discount)
Windows NT (operating system)	$ 450.
Ongoing Costs -	
Telephone Lines (2)	$ 500. (annual)
Internet Provider (if needed)	$3600. (annual)
Training Budget for users	$ 300. (annual)
Brochures, and publicity	$ 600. (annual)

NWnet was financed from an initial Grant from the Diocese of $2500.00 plus an ongoing annual Grant of $1700.00 for telephone, brochures, some equipment and other expenses. The Internet Provider supplied the T1 connection and space for the Server without cost[94], SoftArc generously provided the software as a grant, and the other costs were paid out of the Administrator's pocket. Aside from the initial costs, the savings to a Diocese who uses an email communication system for mailing to its priests, parishes, and people would far outweigh the costs as shown above. For the first few years, costs would be slightly higher as many parishes would continue to demand their mail in the traditional manner — through the Postal Service. However, as the advantage of an email system made itself felt across the Diocese, the number of these parishes should slowly shrink. Once a certain percentage of "email versus postal" parishes had been reached, a Diocesan decision to suspend the use of the Postal Service for regular mailings to parishes could be made, and those parishes still unwilling to move to email could receive their information by fax. The cost of the latter is thus moved to the parishes involved, leaving the Diocese with a very considerable saving.

[94] "without cost" — an income tax receipt was issued annually for this generous donation.

In some situations, a case could be made for the hiring of a part time administrator and trainer. This could be a skilled lay person or priest who would be responsible for the day to day changes to the system, the upgrading and repairing, and the creation of Training Workshops across the Diocese. Workshops would not be limited to the email system, but could include basic Word Processing, church accounting, and Bulletin preparation as well. This could even be done by a retired priest or lay person, one who would be responsible for training the clergy and church secretaries on the use of the communication system, and generally keeping the system functional. The cost for such a part time administrator might be in the range of $10,000.00 Canadian. Such an additional cost would eliminate the expected savings from the change from expensive Postal Service to the almost free email system. However, the advantage of having someone skilled as a consultant to the Diocese for a variety of computer programs used in the parishes might be of greater advantage than the savings.

CHAPTER ELEVEN

REVIEW OF SOME OTHER BBS PROGRAMS

Worldgroup 3.0 by Galacticomm

Worldgroup 3.0 is an excellent software program with the server running under either DOS or Windows 95/NT4.0, and the Client running under Windows. The Client program, operated on the user's computer, is bright, clear and easy to understand, though better adapted to a commercial BBS than a diocesan information system. Galacticomm can provide everything from the hardware needed, to the software, and even to fully pre-built systems, edited for the needs of the purchaser. Worldgroup by Galacticomm is a superb replacement for the thousands of smaller BBS systems that began their life as teen experimental BBSs, and have grown up. Worldgroup can easily include pictures, graphs, and other data that make it ideal for a pay system, or a system that includes many photos, or a commercial system for the advertising and selling of company products. Annual upgrades are an added cost that should be remembered.

Microsoft Server and Convene

Convene International is working on an arrangement with Microsoft that could create a large interactive system, using Microsoft as the Server and Convene software as

the Client. Such a system would mean that no hardware or Server software would be needed, but a monthly fee would be paid instead to Convene. The Client software is approximately $75 US, though the later software may be more expensive. Upgrades are an added cost. Such a system would eliminate the need for a Diocesan administrator, but would still need the training of Workshop leaders in local areas. The monthly fees would probably outweigh any cost savings over using the Post Office. It would be a good choice for a company wanting North American wide easy access through the internet to its own commercial system. It should be noted though, that Microsoft has already given notice that it intends to get out of the Internet server business, preferring instead to specialize in specific products. This may mean, that down the road, a group going this route may find that the Server on which its data depends has been sold to a different company, an organization that may not be particularly interested in the specific needs of the Church.

First Class Intranet System

This is a variation on the present First Class system. The software sits on the Internet, permanently connected, primarily for Internet access, though with modem access as well. It includes its own Website software, as well as BBS type software. Access is by using its Client, or by using Netscape or MS Explorer. Instead of purchasing Licences, a Diocese would purchase a licence for so many users accessing the system at any one time, either by modem or internet. If SoftArc continues its policy of providing free software upgrades, this will be an excellent choice for a Diocese. It would provide both "in-house" email access, and website internet advertising --- the best of both worlds. It is worth serious evaluation by any Diocese.

Netscape's Collabra

The Netscape organization has purchased the Collabra software with the intention of offering a Client Server system for businesses and large organizations. The software is now being developed, and shows some promise. Prices range from $2000. To over $5000 US, plus the cost of licences for users. More information can be sought from their website.

Websites

A number of surveyed Dioceses suggested that they preferred to create a Website for their Diocese, rather than build an in-house Client/Server system. These two are not mutually exclusive. A website, and there are hundreds of thousands of different ones in existence on the Internet, is primarily for advertising. One sets up a website to tell others about a product, a service, or perhaps just ones self. A website is primarily directed to the outside enquirer, the uninvolved, the outsider. No registration is required, no names are needed; only a surface relationship is created. If one wished to advertise the opinions, the teaching, the activities of a Diocese to an outside person, with the intention of interesting them in finding out more about the Church, then a website is the place to do it.

However, a Client/Server system like NWnet is an "in-house" information system, which serves the needs of those already within the Diocese. Registration is required in order to keep track of who is using the system, and to guard against outsiders wanting to abuse the system. Information that is helpful to local churches can be sent

directly to each of the parishes — information that would not be required or even wanted by a visitor to a website. A website is primarily one way communication — information sent out to those on the outside, with little or no communication from the outsider to the inside. One reads a website, one rarely dialogues with a website. A Client/Server system creates internal dialogue, sharing of information, discussion of issues by parishioners and clergy. A website is completely inadequate to these needs; in fact, a website would be antithetical to such a purpose.

It is probably correct to say that a Diocese should have a website on the Internet for advertising purposes, and an in-house Client/Server network for the dissemination and sharing of information from parish to parish, from clergy to laity. At present SoftArc is marketing a new software program which combines both — the First Class Intranet Server system that is sited on the internet, contains a website, and yet contains an in-house communication system that is protected by user registration — a system that is accessible by both modem and the internet. Other software vendors are beginning to offer the same type of system. Their adaptation for use in the Church should open a new era of Computer Communication in the Church.

BIBLIOGRAPHY

Barquin, Raymond C., and Mead, Graham P., "Towards the Information Society", (Selected papers from the Hong Kong Computer Conference 1983), Elsevier Science Publishing Company, Inc., New York, NY, USA, 1984

A Critique of Computer Technology. (Study Guide for the Use of Computers in the United Church of Canada.)

A Study guide created by a department of the United Church of Canada, to illustrate how computers could be used in Christian Education. The guide was forward thinking at the time, but is now rather dated.

Daly, James, "A Match Made in Heaven", Forbes ASAP, June 5, 1995, as reprinted in Computers in Society, Sixth Edition, The Dushkin Publishing Group, Guilford, CT, 1996

Monastics are hired for data-entry projects, like computerizing library card indexes, or the copying of manuscripts into electronic form. From the monastic point of view, it is a return to the medieval Scriptorium, a work that can be done in the time available between their Daily Offices and the work of the monastic house. The implications for the Church is surprising; could the Church become again a leader in the information world? Today data-entry, tomorrow the managing of large areas of information for the world, and the creation of libraries or information that could be kept easily in banks of hard-disks in the basement of monastic houses, linked together around the world, and available (for a fee, of course) to everyone? Could the freeing of theology from dusty tomes on hidden libraries shelves be replaced by theological studies instantly available to everyone around the world for reprinting on home computers? Could theological education be removed from seminaries and transferred from computers to home study groups? The article is short, but seminal.

Dertousos, Michael L., "Communications, Computers, and Networks", Scientific American, Sept 1991, Volume 265, Number 3, as reprinted in Computers in Society, Fifth Edition, The Dushkin Publishing Group, Guilford, CT, 1994

The reshaping of society and its economy is a direct result of the impact of computers and the Information Age. His thesis is that as plows shaped the agricultural age, and engines the industrial age, so computers and communication networks are shaping the Information Age. Though the benefits will be enormous,

will it widen the "gap between rich and poor", dehumanize workers', and increase "white-collar crime"? How will computers differentiate between useful information and infojunk? The creation of common computer connections (like the creation of common building materials) is necessary to escape our present chaos. The Internet is the beginning of such a common system. However, without creation of a common communication convention, we will never progress past "grunts and whistles". However, as the component parts of a global network evolve, countries and industries will tie them together for the advancement of the human spirit.

Dvorak, John C., "Never Ending Death of the Computer", in "Boardwatch" Magazine, page 122, March 1996, Volume X, Issue 3

Dvorak speaks of the demise of the pioneers of computers. The pioneers, he said, remained at the DOS level, still seeking to work with inexpensive computers, in the hobbyist vein, while the rest of the world has moved to the high powered pentiums, Windows, and scads of RAM. The pioneers were left behind with this technological shift, and many simply dropped out. Thus, he argues, there has been a significant shift in computer usage. Dvorak's thinking is reflected in Sherry Turkle's significant observation that computer programmers no longer work on the "whole of a program", but concentrate within a team on a small segment of a vast program. There has been a change from "mastery of a whole" to concentrated work on a fragment. Control in computers has shifted from "creative pioneers" to the owners of software companies who control assembly line programmers.

Filipczak, Bob, "Telecommuting: A better way to work", Training, the magazine of Human Resources Development, May 1992, as reprinted in Computers in Society, Fifth Edition, The Dushkin Publishing Group, Guilford, CT, 1994

Telecommuting, working from a home office that is electronically connected to the head office, is being tried in many firms in North America. It will have a vibrant future, once the concerns of supervision and office networking are solved. This issue has importance for the church; clergy work in isolation from their head offices, separated already into home offices. The learning gained in Telecommuting should be of definite importance in linking clergy together into a more productive team. The author talks about "working smarter" and finding training and support for the telecommuter of the future. Clergy could "worker smarter" if they learned to connect their office electronically. Sharing and team work could replace isolation and parochialism.

Forester, Tom, High-Tech Society, The Story of the Information Technology Revolution, The M.I.T. Press, Cambridge, Massachusetts, 1987.

A introductory volume for those wanting to understand the beginning impact of computers on society. It deals with the beginnings of computer and computer chip development. The chapter on The Telecommunications Explosion is fascinating, though now dated. What is foreseen in this chapter is even now in place in society. The electronic office however is not developing as he prophesied; supervisory and control forces in the business world run counter to its success. The chapter on Problems for High-Tech Society should be required reading for all those overly enthusiastic with the impact computers are making on our world.

Kupfer, Andrew, "Alone Together: Will Being Wired Set Us Free?", Fortune, March 20, 1995, copyright - Time magazine, as reprinted in Computer in Society, Sixth Edition, The Dushkin Publishing Group, Guilford, CT, 1996

The advancement of computer communication and the cell phone is changing our work and leisure interactions. Just as the train and the clock organized society to run on schedules, so the coming age will free us from those schedules. Work may be done by information technicians from anywhere, for anyone, on short-lived contracts of hours or weeks. Teams of workers will form to do a task and be broken up within days as workers move on to new contracts. However, as telecommuting becomes commonplace, cities will still attract those who yearn for the culture and leisure associations that are uncommon in remote areas. Electronic communications change our friendships, yet since we will be unsure of who is exactly at the other end of the electronic device inhibit our intimacy. For the clergy, the advances of electronic communication will allow team working and collaboration with others over long distances, and prepare the way for sharing in parish supervision. The cell phone will allow clergy to be instantaneously available to parishioners but will also allow others to know exactly where a person is at all time. Conversations may be digitally guarded, but locations will be known absolutely.

Lochhead, David, Theology in a Digital World, United Church Publishing House, Toronto, 1988

The definitive manual for the understanding of computers in a theological environment. After showing how we can do theology in a world of computers, Lochhead gives illustrations of the use of computer communication within Christian communities. He shows how networking allows personal communication, yet is almost completely non-physical --- a seeming paradox. He asks if God can Love Computers, and shows how computers are part of the

creation of God, and that God loves His Creation. Our own projections onto computers can imprison our thinking. Computers in the Church force Christians to rethink a static theology, allowing for a dynamism that is uncomfortable to some, but liberating to others. The computer has created as great a change in the Church as did the printing press 4 centuries before. Though Lochhead shows how the computer can change relationships and communication within the church, it would seem more correct to suggest that it was the "modem" that is the agent of that change. Communication between persons using computers is the change agent that will transform the Church in the coming century, just as it is already transforming the business world. Lochhead deals delightfully with the Tower of Babel, suggesting that while we allow ourselves to be alienated by different languages we do not have to deal with our sin or our differences. The common language created by computers can connect people together with a new dynamism that will threaten and destroy older traditions. The computer is a possibility machine, he says. However it does not create fixed and final ideas. Instead it deals with ever changing issues, that allow for growth through interaction. Such ideas of change and evolution are threatening to a theology that demands fixed and authoritative answers. Finally Lochhead shows how information is not factual, but abstract --- within a computer it is a series of zeros and ones --- information is separated from knowledge, and differs in values. The Church has been in the past a primary information provider, and it may still see itself as the provider of information about God and salvation to all mankind. However, we need to be careful that we see the distinction between the data that can be computerized, and the relationships that the Church can create between God and man --- and man and God. "Data kills, the Spirit gives life."

Rheingold, Howard, "Virtual Community", 'A William Patrick Book', Addison-Wesley Publishing Company, Reading, Massachusetts, USA, September 1993.

Can virtual communities exist and grow on "computer mediated communication systems"? Howard Rheingold has written a masterful document describing the Well, a San Francisco BBS, with thousands of users. He describes the kind of community that was established, based on "interest not locality". His warm human stores illustrate his "virtual community". His book documents the rise of computer communication, from the scientists of the 50s, through the military driven concerns of the 60s and 70s, to the open millions of the Internet of the 90s. He shows how the combination of the sharing of scientists, the networks of the military agencies, and the energies of youth BBSs springing up across the US and Canada has created the Internet of today. He details the fear that computer communication will be censored, or captured by either commercial or government interests. He documents the struggle between freedom of communication and the concerns raised by human greed or human legislation. What is missing for me is the religious version of a vision of computer communication. For example, no where does he

mention Ecunet, and its genuine ecumenical vision of open and sharing communication already in existence between clergy and laity --- remembering that Ecunet came into existence 10 years before he wrote his book. The author shares his fears of the encroaching commercial and governmental restrictions on what he sees as the right of all to communicate, to share, and to exist in virtual communities. If his vision is correct, he has documented a new style of community, one with its own freedoms, rules, and dialogue, and concerns.

Rossman, Parker and Kirby, Richard, Christians and the World of Computers, SCM Press, London, 1990

A study of what God is doing in the world of computers, and what this means for Christians. The dangers and opportunities of computers for the Church are analysed and detailed. Some have suggested that computers are diabolical, others that they are helpful but can tell us nothing about God, others wondered how computers and religion could intersect, and finally, some would say that the Holy Spirit is present in computer science working for change and growth of knowledge. Two chapters explore how the Church can use computers as mechanisms of compassion and mission. The calling is to be creative and responsible. The Church must create a code of ethics for computer professionals. Finally, the authors opt for a continually changing theology, based on the idea that God is creating even now a new world community of justice. Within this every creating theology, the computer is to be found as a symbol of the revelation of the ever creating God. As an aid to study, each chapter ends with questions for discussion, theological ideas for reflection, and even meditations, prayers, and worship suggestions.

Slouka, Mark, "War of the Worlds, Cyberspace and High-Tech Assault on Reality", Basic Books (Harper Collins Publishers) New York, NY., USA, 1995

This is a helpful book, rather more penetrating than Silicon Snake Oil, described by its author as a "speed bump on the fiber-optic highway". He is concerned that the technocrats of the future will see other humans as "roadkill on the digital highway". He is concerned about the creation of a virtual reality devoid of ethics or humanity --- where nature, society and humanity become shadows of reality compared to the cyberstate that can be created by the computer.

This book caught my attention more than any other; it sounds an alarm in regard to the amoral technocratic direction of our drive towards computerization, and seeks to regain the preciousness of human life in our rush towards a virtual society.

Steinberg, Steve G., "Netheads vs Bellheads", in Wired magazine, October 1996, page 145, Wired Ventures, San Francisco, CA, USA

An excellent article on the competition between those supporting the use of Asynchronous Transfer Mode technology (ATM) which uses hardware solutions and those favouring intelligent software solutions to radically improving the bandwidth (and therefore speed) of internet communication. The article affords a rare look into the future of the internet, and the struggles going on to acquire it for monetary purposes. The answers seems to be in the layering of internet structures, using ATM as the lowest level, but moving to software solutions as the use of the internet moves beyond its simplest level. Helpful to understanding future expansion and broadening of the internet.

Stoll, Clifford, "Silicon Snake Oil, Second Thoughts on the Information Highway", (First Edition), Bantam Doubleday Dell Publishing Group, New York, NY, USA, April 1995

An easy-to-read book that will be humorous to computer addicts, and sound like gospel to those opposed to computers in society. The author rightly points out the failings of computer use in our society, reminding us of the value of books, walks in the park, and pleasant conversation. It is good reading for anyone who is inclined to take the computerization of society too favourably, or the value of computers as far reaching. However, I suspect that the author wrote his book on a computer, and still uses email to connect to his friends.

Turkle, Sherry - The Second Self, Computers and the Human Spirit, Simon & Shuster, Rockefeller Center, New York, NY. USA, 1984

A study of computer users from a psychological and sociological point of view. Ms. Turkle argues that children approach computers as alive (what is the computer's identity), teens approach computers as machines to be mastered, while young adults approach computers as a clue to their own identity (given the computer who am I as reflected in the computer's eye). From this point of view, she analyses the reactions of different people, from children to hackers, to the computer, and illustrates how the computer is changing our society. The loneliness and desires of mastery for the "hacker" are particularly interesting. Finally she challenges the view that the human mind and the programmed computer are much closer than is comfortable to imagine.

Wiener, Norbert, God & Golem, Inc., Chapman & Hall, London, 1964

A synthesis of several lectures by Norbert Wiener, leading to a study of the social consequences of cybernetics. He details kinds of learning, and then suggests how computers can learn, and ultimately reproduce themselves. More important is his concern with the relations that humans can have with computers, and with systems that network computers. He believes that computers can solve language translation, perform medical diagnoses, and invent new machines and systems on its own. Ethical problems arise as computers are used in military tactics and strategy, since the computers can be programmed to fight and win, irrespective of ethics or human values. The observer of the machine is transformed into an active participant with the machine in the process. Wiener believes that computers need the intervention of human beings "as arbiter". Finally, Wiener suggests that cybernetics is better adapted to the biological sciences than sociological or economic.

Appendix A:

St.John the Apostle Church

ANGLICAN CHURCH OF CANADA
2208 St.John's St., Port Moody, BC V3H 2A7
Phone & Fax: 604-936-7762 Rectory: 942-8850 Nwnet: 878-0466 Internet: ronb@nwnet.org

The Diocese of <Diocese>
<Address>
<City>, <Country> <PostalCode>

Attn: The Rt. Rev'd <name> <surname>
Diocese of <Diocese>

Dear Bishop <surname>,

I am an Anglican priest enrolled in a Doctor of Ministry program at United Theological Seminary, Dayton, Ohio. My doctoral thesis is entitled "Computer Communication for the Church". I am writing with the permission of my Bishop, the Rt. Rev'd Michael Ingham.

As part of my doctoral thesis, I am conducting a survey of all the Dioceses in North America to discover how many are using any sort of Electronic Mail System in the Diocese; and if so, what computer software is used, and how it is used.

My doctoral project is a practical one: To develop and evaluate an E-mail system for a Diocese that will facilitate e-mail communication between priests, parishes and people of the Diocese, such that two way communication will be enhanced, information may be delivered instantly to all priests and parishes, and so mailing costs may be substantially decreased,

I have set up, and am now administering an E-mail Communication system for the Diocese of New Westminster, called NWnet, using First Class Client/Server software. NWnet already connects many priests, parishes, and people in our Diocese.

The results of this Survey will discover what is happening in the Anglican/Episcopal Church in North America, and should help Committees in planning for e-mail systems in their own Dioceses.

It would assist my doctoral project if you could have someone at your Diocesan office complete the attached survey, and return it in the enclosed envelope. If you wish to receive a copy of the Results of the Survey, prior to the publication of the Thesis, fill in the space provided. Please return the Questionnaire whether your Diocese possesses an e-mail communication system or not.

Yours in Christ,
The Rev'd Ron Barnes,
parish priest.

Appendix B:

Survey of Dioceses for D. Min. Thesis The Rev'd R.L.

Diocesan Computer E-Mail Communication Questionnaire

[This Questionnaire will take less than 2 minutes to complete. Please mail it back to me in the enclosed envelope whether your answer is ☑Yes or ☑No. Your kind attention will help me to help the Church.]

A) Does your Diocese possess or use a computerized Electronic Mail System for Communication with parishes, priests, or anyone else? ❑Yes ❑No

B) If the answer to the above is ☑Yes, please answer the following questions:

1) What software do you use to run your communication system?.....

2) What type of computer do you use as the Server for the Diocesan email system?
❑ PC ❑ MAC ❑ 386 ❑ 486 ❑ Pentium ❑Other
3) What operating system runs the Server? ❑DOS ❑Windows 3.1(95) ❑MAC ❑Windows NT
4) Who supervises the communication system? ❑ Single person ❑ Committee ❑ Company

5) What is the approximate operating cost per year for your Diocesan email system? $ .....

6) Is the Diocesan system used for:
❑ a) Distribution of Diocesan information to parishes and/or clergy
❑ b) Committee Discussion between meetings
❑ c) Distribution of Minutes of Diocesan Committees
❑ d) Clergy (and/or lay) or parish discussion and intercommunication
❑ e) Private or public sharing of information amongst members of Diocesan groups
❑ f) Distribution of Anglican Worldwide News
❑ g) Sunday Lectionary discussion and ideas
❑ h) E-mail to other Diocesan officials only.

7) Does your Diocesan E-Mail system have a connection to the internet?

If so, please describe..... Email address:.....

8) Would your Diocese be interested in knowing the results of this Survey, prior to its publication as part of the Doctoral Thesis "Computer Communication for the Church". ❑ Yes ❑ No
If the answer to this question is ☑Yes, please include an address to which the Survey Results can be sent:
Name: ..... Diocese:.....
Diocesan Address: .....
City:.....Postal Code:.....

Appendix C:

NWnet PowerPoint Presentation:

For presentation purposes, few computer programs are as simple to use as Microsoft PowerPoint. Using this program, it was easy to create "slide shows" that could be displayed on a computer, either at a display table at Synod Meetings, or at the beginning of a Training Session.

When making your own for the first time, I suggest that one follows the leading of the Wizard in MS PowerPoint as far as choosing a background, and style of lettering. Type in the words similar to the example given below, adapting them to the name and details of your own Diocesan BBS. You will find that you have a very good looking presentation in less than an hour, that can be used as is, or revised at will. There is a command in Microsoft PowerPoint that allows the presentation to automatically cycle over and over. Thus the presentation can be copied to a display computer, and left to run all by itself. People will stop and follow the text, and learn how simple it is to use your Diocesan Communication program. The following is an example of a possible text for a PowerPoint presentation; it is the text used in the NWnet presentation used at Workshops.

NWnet: Diocesan E-Mail System

An Introduction to a Simple, Easy, and Free Way to Communicate Today.

What is NWnet?

NWnet is a First Class Client/Server Bulletin Board System adopted as the official email system for the Diocese of New Westminster
NWnet provides instant communication between priests, parishes, & people
Puts worldwide Anglican Info at your fingertips
Instant, free, no postage, no paper

By Using NWnet, You can

Leave public or private messages
Read Sermon Notes
Read Diocesan News
Copy News directly to your newsletter
Access Diocesan Information easily

And with NWnet

Parishes can receive info from the Synod Office through NWnet directly to their computer
There it can be read, stored, printed, or deleted
Fast, efficient, free, no postage, no delay
No paper - environmentally sound
Internet E-Mail too!

Use NWnet to connect with the Internet

Free, no charge, simple
40 million people online
NWnet is now onsite at Wimsey, an ISP.
You have a free Internet connection NOW

Who can use NWnet ?

Priests, parishes, and people of the Diocese of New Westminster
Up to 500 users by modem
Up to 55 users through their own Internet Provider
Connect from NWnet to Anglinet now
Connections with Australia, South Africa and other parts of the Church are coming

Interactive

Read / reply to all public messages
Write msgs to others in 100% privacy
Egalitarian; all are equal
Share in realtime CHAT sessions
Like a round table discussion

What do I need to use NWnet?

Computer -- Windows or Mac
Modem -- 14400 bps to 28800 bps
The FREE First Class Client program
A telephone connection nearby
A desire to share with others
You do NOT need a separate phone line

How do I start?

Install FREE software (Windows or Mac)
Type in your name, ID, and password.
Setup your Login Screen to match your modem
Set your First Class Client to dial NWnet at 878-0466

Now you are Online

Point and click on any Icon to see the messages
Reply to any message you can read
What you can see is public
What you can't see is private (naturally!)
Public Conferences (over 50) are open to all.
Private Conferences only to those with access

NWnet has 4 Sections:

Mailbox (your private mail)
Conferences (most are public)
File Library (download for free)
Online Chat (with others online)

Using the Mailbox Section

Click on your private Mailbox Icon.
Click on Message, New Message, and enter the recipients name in the To:
Type your note, edit, until it is done
Click on Message
Send when finished — a postmark will appear to show you it has been sent.

The Mailbox (cont'd)

Mail in your Mailbox is 100% PRIVATE.
Only you and your recipient knows a note even exists; no one else can read it, guaranteed.
You may change the colour, text, size of letters, or quote from a previous letter sent to you.
A Spell-checker helps with spelling.
Or do your work offline with the Offline Reader

Using the Conference Section

NWnet Conferences are labeled with their real names, i.e.:
Diocesan Info, Dioc Info Disc., Essentials, SIA, Anglican News, Sermonshop, Deaneries, Native, Ethics, BCAYM, Cursillo, Technology, Small Groups, Ethics, Deacons, Artaban, Humour, Planned Giving, Canons, etc.

Conferences (cont'd)

Other Conferences are COGS, Prov.Synod, Evangelism, Peace & Justice, Native, River's Commission, Spencer Commission, Sorrento
All msgs in these Conferences are public, so you may read and respond at will.
You may start Conferences within Conferences
Each has a different Icon for easy finding
And yes, Private Conferences...

NWnet has Private Conferences, that only certain users can see:

Bishop, Archdeacons & Regional Deans (BARD)
Communications Committee
Technology Task Force
Synod Office
Your own Committee could have its own private Conference too. Just ask.

Using the Files Library

Click on the Library Icon
Choose Area, - Main, Minutes, Windows Files, Mac Files, Text
Double-click on the file you want to Download
Watch it being sent to your computer fast.
It's that simple.

Files Library (cont'd)

Download Diocesan or Synod Minutes
Download Church programs or Canons
Download important Church documents, or upload them for others.
All Library Files are zipped up for ease of handling using PKZ204G.
Download PKZip from the Main Library.

The Online Chat Section

Click on View, then Online Chat
You may "Invite" anyone else who is online at the same time
to CHAT with you, in real time.
Type your comments in the Online Box,
when you press Enter, your msg. will appear on both screens.
Others will answer you in the same way.

Leaving NWnet:

Click on Service, then on Disconnect
Turn off your modem. It's that simple!
Enjoy using our contemporary, free, simple, graphical NWnet.
Everyone has 45 minutes per day of online time.

NWnet is for you.

Dial into NWnet as often as you like
NWnet is available 24 hrs. per day.
You must use NWnet regularly, or your registration will lapse..
Remember to use the phone number
878-0466

NWnet is for all Anglicans:

Share the First Class Client with other Anglicans, so that they too may use NWnet.
The more who use NWnet regularly, the better it will be for everyone.
Air your views,
Discuss the Faith with others,
Learn by sharing.
NWnet is the official email system for our Diocese

NWnet Info

Still need help? Call Fr.Ron Barnes at 942-8850
The Diocesan NWnet Committee runs NWnet, under the supervision of Technology Task Force
2 lines to serve you — more in the future
Internet connection too -- 5 lines
E-Mail Communication for the Church of Today and Tomorrow.

NWnet - Email for our Diocese

Hope to see you all
online at NWnet
every day — 878-0466

Appendix D:

Computer Communication Project,
United Theological Seminary, Dayton, Ohio

Fr.Ron Barnes
March, 1997

Pre-Training Questionnaire

[This Questionnaire is part of my Doctor of Ministry "Computer Communication for the Church" Project. It is part one of a two part Questionnaire to be given to trainees before participating in a Computer Communication Training Session, to measure the results of the Training Session. Your participation is very helpful for me in the ongoing process of the Doctor of Ministry degree. I am certain it will also be helpful for you.]

1) Your Status:
Age ..... Priest ❑ Lay ❑ Male ❑ Female ❑
Previous Computer Experience: None ❑ Beginner ❑ Moderate ❑ Expert ❑
Have you used NWnet before coming to the Training Session? Yes ❑ No ❑
Do you own a computer? Yes ❑ No ❑
If Yes ☑, then what kind? DOS❑ Mac❑ Windows 3.1❑ Windows95❑

Do you use the internet? Yes❑ No❑ Email address: .....

2) What do you expect to receive from this Training Session?
.....

3) How do you expect to use NWnet in the future?
.....

.....

4) How do you believe the Church should use computer communication in the future?
.....

.....

5) Your Registration Number: .....

Thank you for your participation. Ron+

Computer Communication Project,
United Theological Seminary, Dayton, Ohio

Fr.Ron Barnes
March, 1997

Post-Training Questionnaire

[This Questionnaire is part of my Doctor of Ministry "Computer Communication for the Church" Project. It is part two of a two part Questionnaire to be given to trainees after participating in a Computer Communication Training Session, to measure the results of the Training Session. Your participation is very helpful for me in the ongoing process of the Doctor of Ministry degree. I am certain it will also be helpful for you.]

1) Your Status:
Age ..... Priest ❑ Lay ❑ Male ❑ Female ❑
Previous Computer Experience: None ❑ Beginner ❑ Moderate ❑ Expert ❑

2) What did you learn from this Training Session that is most helpful for you?
.....

Has this answer changed from what you wrote in Questionnaire One? Yes❑ No ❑

3) What was most helpful about the teaching of the Session?
.....

4) What was least helpful about the teaching of the Session?
.....

5) How do you expect to use NWnet in the future?.....

.....

Explain how this expectation has changed since you began the Training Session? .....

.....

6) Do you see ways in which the Church could use computer communication to improve its work and ministry?

.....

7) Your Registration Number .....

Thank you for taking the time to fill in this Questionnaire. Ron+

Computer Communication Project,
United Theological Seminary, Dayton, Ohio

Fr.Ron Barnes
March, 1997

Post-Training Questionnaire (8 weeks later)

[This Questionnaire is part of my Doctor of Ministry "Computer Communication for the Church" Project. It is part two of a two part Questionnaire to be given to trainees after participating in a Computer Communication Training Workshop, to measure the results of the Training Workshop. Your participation is very helpful for me in the ongoing process of the Doctor of Ministry degree. I am certain it will also be helpful for you.]

1) Your Name: .....

2) Considering it is now at least 4 weeks since the Training Workshop, how often do you use NWnet each week?
Once/ week ❑ Twice/ week ❑ Three times/ week ❑ Five times/ week ❑ More❑

3) How are you using NWnet? (Check all that apply)

a) ❑ Diocesan Information
b) ❑ Committee Minutes
c) ❑ Free Internet E-Mail access
d) ❑ Chat with others
e) ❑ Downloading of Files
f) ❑ Messaging to others online
g) ❑ Reading Worldwide Anglican News
h) ❑ Reading Sermonshop
i) ❑ Other .....

4) How do you believe NWnet could serve you better? .....

.....

5) What do you like about NWnet?.....

.....

6) What do you dislike about NWnet, and wish were changed? .....

.....

7) How do you believe email Communication can further the work of the Church?

.....

.....